An Ounce of Prevention Revisited

A review of health promotion and selected outcomes for children and youth in BC schools

Provincial Health Officer's Annual Report 2006

BRITISH COLUMBIA
The Best Place on Earth

Office of the
Provincial Health Officer

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Office of the
Provincial Health Officer

Ministry of Health

Victoria, BC

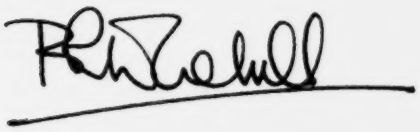
March 19, 2008

The Honourable George Abbott

Minister of Health

Sir:

I have the honour of submitting the Provincial Health Officer's Annual Report for 2006.



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Provincial Health Officer

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Highlights

Research consistently shows that health and education are inextricably linked. Those with better education are healthier than those with less education. Most students in BC are progressing well through the education system, which bodes well for their future, but females consistently do better than males in most aspects. There are others who do not do well, and they require additional assistance at school in order to succeed and make a successful transition into adulthood. The report's findings are summarized below:

- Students and youth rated their health and well-being quite high, although about 50 per cent indicated they had some type of chronic condition. Females generally reported lower health status, except for injuries, and there were notable geographical variations throughout the province.
- Despite the perceptions of students, the health of BC's children and youth requires attention. A large percentage of children and youth are overweight or obese and are likely to suffer a poor quality of life in adulthood unless changes are made. They are relatively inactive, do not necessarily eat in a healthy manner, and often skip breakfast. Inactivity increases with age, and females are less active than males. Being active, eating a variety of healthy foods, and having a healthy view of what is a proper weight are all important factors in improving the health of children and youth.
- Students in BC tend to worry a lot, and research has shown that at any one point in time, 15 per cent of BC students suffer from some type of mental disorder, mainly anxiety disorders. The percentage of students feeling distressed has increased over the last decade, and females are consistently more distressed than males. Suicidal ideation is still high, and 7 per cent of youth indicated that they had attempted suicide in the year prior to the 2003 Adolescent Health Survey.
- Tobacco use among teens fell over the last 15 years, and the percentage of those who had never smoked increased significantly. Youth smokers 15 to 19 years old in BC smoked fewer cigarettes than the Canadian average. Young people, however, are still exposed to second-hand smoke in a variety of settings, and it appears they are significantly more exposed than older age groups.
- Another positive trend has been the reduction in those trying alcohol, especially those under the age of 15 years; however, for those who did drink, binge drinking increased significantly, and drinking (including binge drinking) or being under the influence of alcohol in a school setting is a disturbing problem.
- Marijuana use increased significantly between 1992 and 1998 but has levelled off since that time. Heavier use is more likely among males than females and more likely among those in Grade 12. The percentage of students who tried other drugs fell between 1998 and 2003, which is an encouraging sign, but there is also worrisome evidence to suggest that a small number of students (2 per cent) use hard drugs on a frequent basis (at least once a week).
- There has been a significant reduction among BC students reporting that they had sexual intercourse, and for those who did have sex, there has been a significant increase in the use of some type of birth control. In 2003, however, there was still a high percentage of students using the

risky withdrawal method, and only two-thirds used a condom. Other trends include a reduction in multiple sex partners and delaying sexual debut. Teenage pregnancies and abortions are both down dramatically over the last 10 years, reflecting more birth control usage and fewer youth engaging in sexual intercourse. However, the incidence of sexually transmitted infections has increased over the last few years, particularly gonorrhea among females and syphilis among males. Chlamydia remains at stubbornly high rates.

- Generally, younger grade students have a more positive outlook on the school environment, although Grade 12 students have a better outlook than those in Grade 10. This trend is also evident when considering school connectedness scores; those students with higher connectedness scores do much better in school and report better health and lower rates of unhealthy, risky behaviours. Also, female students have a better outlook on school than male students. Older students have shown some improvements in liking school, while the percentage of Grade 3/4 students who like school has recently decreased. There has also been a decrease in the percentage of Grade 3/4 students who like what they are learning at school. These downward trends are both cause for concern.

- As students progress through the school system, bullying and related behaviours decrease in all grades, males are more likely to suffer from bullying behaviours than females. Bullying and related behaviours generally improved early in the millennium but more recently, bully-free behaviour has fallen marginally, a worrying sign. There was a reduction in physical fighting, however, between 1992 and 2003, especially amongst males, although males are still significantly more likely to be involved in physical fights. Weapon carrying has also dropped significantly, especially among male students. A disturbing trend that has emerged is that of cyberbullying—the use of emails and text messaging in a harmful manner. Another recent worrying trend is the small decrease in the percentage of students who respect people who are different, although between 80 and 85 per cent of students generally show respect.

- There are several groups of students who do not do very well in school settings and whose developmental and health status can be severely compromised. These are children in government care, those who have been abused or have challenging home lives, those whose sexual orientations are not shared by the majority of other students, and those who are marginalized or street-involved. There are many overlaps among these groups. Many come from families with low socio-economic status, and a disproportionate number of these marginalized students are Aboriginal. The school is often not a welcoming place for them and so they are at higher risk of dropping out, engaging in risky behaviours, running away from home, and/or becoming street-involved. These students require special attention if they are to thrive as healthy adults.

The following section reviews the recommendations of the first *Ounce of Prevention* report and assesses government's response. Overall, the Ministries of Education and Health are to be commended for their responses. More can still be accomplished and ten new recommendations are therefore presented at the end of this section.

Recommendations

Summary of the recommendations and actions of the 2003 report:

1. Re-commit to support Healthy Schools initiatives.

The Ministries of Education and Health have jointly created the position of Director, Healthy Schools, to support coordination and cooperation between the two ministries and with the federal government and other members of the Joint Consortium for School Health. This office has also received staff resources to assist in its work, which among other things is to develop a strategic approach and common vision of the health-promoting school that is supported and maintained by a comprehensive, school health approach. Funding for the CommunityLINK (Learning Includes Nutrition and Knowledge) program was increased in 2004. These funds support districts to address the needs of vulnerable students.

2. **Develop and implement an evidence-based curriculum that runs from school entry to graduation as part of a comprehensive school health promotion process.**

   Since 2005, the Ministry of Education has revised and implemented its Health and Career Education curriculum for Kindergarten through Grade 10. At Grade 10, the Health and Career Education curriculum is called Planning 10.

   In addition, the physical education curriculum for Kindergarten to Grade 7 was revised in 2006 and is currently being implemented in BC schools. The Ministry of Health, in partnership with the Ministry of Education, developed Healthy Eating and Physical Activity Learning Resources for BC Schools, Grades 8–10. Each Healthy Eating and Physical Activity Resource meets the minimum mandated expectations for the healthy eating and physical activity prescribed learning outcomes in the "health-related" curriculum. Also, they integrate other appropriate curriculum (physical education and home economics) to support integrated learning across topic areas, as well as incorporate ethnic and First Nations' diversity and culture.[1] The Ministry of Education also recently revised the graduation transition requirements for Grades 10–12.[2]

3. **Develop an infrastructure (staff) at the provincial and regional level to support implementation of comprehensive school health promotion.**

   The Office of the Director, Healthy Schools, is now supported by two full-time equivalent positions, funded through the Ministry of Education.

   In an effort to enhance comprehensive school health at the local level, the ministry is working with school administrators and teachers in the development of a Healthy Schools Network, where schools work to develop healthy schools using a comprehensive school health approach. In October 2007, BC had 70 member schools.

   The Ministries of Education and Health have developed a Healthy Schools Assessment Tool *(Creating Healthy Futures)* that enhances the capacity of educators to understand comprehensive school health.

4. **Support multi-level training in health education in the form of university degree options and substantial in-service training for practicing teachers.**

   There has been some limited progress in this area. For example, in February 2007, the Ministry of Education held a one-day training workshop for all school districts in addictions education, using a train-the-trainer approach. Experts from the Centre for Addictions Research of BC led the training sessions. Those trained (82) were then able to return to their school districts to train others.

5. **Set up an ongoing student health monitoring process to evaluate progress over time.**

   The Ministries of Education and Health are exploring the development of a health survey that will enable the province to capture the information it requires, while simultaneously providing the school community with feedback reports so they can also benefit from the process and the information. A key goal is to create a survey tool that will streamline data collection so that the health information required by both sectors is captured by one mechanism. Timeliness in reporting back to the school community is viewed as critical to creating success in this area.

6. **Establish a formal mechanism whereby all related ministries and other stakeholders in child and youth health contribute to comprehensive school health promotion.**

   The Office of the Director, Healthy Schools, has been created to provide systems integration at the ministry level, and provide coordination and support to education partner groups at the local level to implement comprehensive school health initiatives.

   Government has developed the ActNow BC program, with its own Minister of State, to focus on the need to reduce smoking, improve levels of physical activity, focus on nutritious foods, and reduce levels of overweight and obesity in the province. Schools are an important setting for these initiatives. For example, smoking has recently been banned in all schools and on all school property;

[1] *All BC provincial curriculum documents can be found online at: http://www.bced.gov.bc.ca/irp/*

[2] *The graduation transition requirements can be found online at: http://www.bced.gov.bc.ca/graduation/grad-transitions/welcome.htm*

Action Schools! BC, a program to get students active and eat nutritious foods, is available for all Kindergarten to middle school students; daily physical activity has been introduced for all students; the Guidelines for Food and Beverage Sales in BC Schools is being implemented, which will mean banning junk food sales in schools; and a School Fruit and Vegetable Snack Program has been introduced.

The province has developed and put into operation a Child and Youth Mental Health Plan, the first such plan in Canada, and introduced the FRIENDS for Life program to Grade 4 and 5 students to reduce the risks of anxiety and build resilience in children. The *no2meth* website[5] has been developed to provide grade-appropriate resources to teachers and parents related to methamphetamine, or crystal meth, as well as alcohol, tobacco, and marijuana. Curriculum has been revised in sexual health and physical activity to promote healthy living, and immunization for Human Papillomavirus (HPV) will be available in the near future. There is now a Healthy Schools Network within the province and it is now mandatory for school districts to have a code of conduct to promote safe, caring, and orderly schools, consistent with provincial standards.

New Recommendations

Recommendation 1: Evaluate New Initiatives and Develop a Consolidated Report Card

Ongoing evaluation is required to ensure that the initiatives introduced over the last four years work as expected, or to make improvements as necessary. Training of teachers and instructors will be an important component of implementation. While some evaluations are planned or underway, results are often presented in separate reports or websites. The provincial government should develop a single, provincial-level report card, perhaps based on a streamlined survey tool card, that contains the results from the various initiatives. This will help government and school districts to keep a focus on the importance of the school and its activities as a setting for health promotion, and will help sustain these new initiatives.

Recommendation 2: Make Better Use of Existing Data

While there are several good datasets that can be used to monitor the health and well-being of students, they can be put to additional use to help inform policy and practice. For example, the Ministry of Education's School Satisfaction Survey contains several years of data related to school environment and health issues. These data can identify the top-performing schools and/or school districts. By looking at and highlighting the reasons behind high performance, there is a potential for others to learn and adopt successful practices. Further, given the importance of school climate and school connectedness for educational performance and health status; a school connectedness index could be created using the School Satisfaction Survey questions, to determine what works and what can be learned from high-performing schools and/or school districts.

Recommendation 3: Develop and Implement a Keeping Healthy Course for Grade 12 Students

Consideration should be given to introducing a Grade 12 course on Keeping Healthy and Responsible Decision-Making. Grade 12 is an important transition year for students and the majority of Grade 12 students do not feel that they are learning very much at school on how to be healthy. The course should emphasize responsibility related to specific risk-taking behaviours, such as substance use and sex (e.g., the need to use a condom), and include the use of the Canadian Guidelines for Sexual Health Education. Well trained, supportive teachers are needed to deliver such a course, and students will require access both to resources that are youth-friendly and health education professionals that are non-judgmental.

Recommendation 4: Improve Reporting of Milestones and Understanding of Differences Between Sexes and School Districts

Given the importance of education to current and future health status, there is a need for better recording of educational milestones. For example, the percentage of eligible students participating in Foundation Skills

[5] http://www.no2meth.ca

Assessments has fallen in recent years, which has created under-reporting. There is also a need to track what happens to older students who drop out of school, to look at why they drop out and what measures can be taken to keep them connected to school. Finally, there is a need to understand why there are differences between genders, and differences between urban and rural districts in terms of educational achievement and health status, and what can be done to minimize these differences while raising achievement overall.

Recommendation 5: Increase Support to At-Risk Students

While the majority of students are successful academically and are healthy, there is a group of students who are at risk of not meeting their potential academic or health outcomes. This group includes: children in government care; students who have suffered abuse or reported a challenging home life; lesbian, gay, or bisexual students; and marginalized or street youth. Under the United Nations Convention on the Rights of the Child, every child has the right to thrive, and special initiatives are necessary to ensure that these at-risk children and youth feel that they belong in school, and are accepted and welcomed by other students and teachers, so that they too can thrive and achieve academic success and related good health. Enhancements to programs such as CommunityLINK, which provides resources for community schools and school meals, can help support some of these disadvantaged students. Programs could be expanded to include nutritious school breakfasts, given the importance of this meal for learning and the fact that half of Grade 7 to 12 students do not have breakfast every school day.

Specific programs should be developed and evaluated to assist children in care, because they have poor education and health outcomes, and they are the responsibility of the province.

Suggestions made in the recent joint report of the Representative for Children and Youth and the Provincial Health Officer (2007) on educational experiences and outcomes of children in care should be implemented as recommended.

Recommendation 6: Support Increased Early Learning Monitoring and Opportunities

The latest data suggest that nearly 30 per cent of children entering Kindergarten are not fully "ready-to-learn", based on results from the Early Development Instrument (EDI). Only one-third of all Kindergarten students are assessed each year using the EDI. The EDI should be implemented for every child at initial school entry, whether in Kindergarten or Grade 1.

The development of StrongStart Early Learning Centres are a way to help improve "readiness-to-learn." The latest provincial budget has stated that 400 of these centres will be operational by 2010. These centres could also be used as a setting to provide health promotion material to the families of pre-Kindergarten children who attend, similar to the *Healthy Living For Family Booklets* developed for school-aged children and their families.

Recommendation 7: Expand Smoke-Free Environments for Young People

Measures are underway to expand smoke-free environments. The school-aged population is more vulnerable to second-hand smoke in vehicles than older people, due to their lack of choice to be in that environment. Parents of students should be informed of the dangers of smoking in a vehicle while their child is present, and smoking should be banned in vehicles when young children are present. A recent national poll released by the Canadian Cancer Society indicated that 82 per cent of those surveyed supported a ban on smoking in vehicles when children under the age of 18 years are present. The poll also indicated that 69 per cent of smokers supported such a ban (Canadian Cancer Society, 2008). In February 2008, the BC government announced in the Speech from the Throne that "to ensure children are no longer subjected to second-hand smoke in any vehicle, new legislation will ban smoking in vehicles when children are present (Province of British Columbia, 2008). Further smoking restrictions should be implemented in foster homes of children in care, consistent with the recommendation made in the 2006 joint report by the Child and Youth Officer for British Columbia and the Provincial Health Officer.

Recommendation 8: Expand Mental Health Initiatives

While steps are being taken to deal with overweight, obesity, poor nutrition, and physical inactivity in schools, emotional and mental health issues continue to be a challenge for youth. Consideration should be given to expanding evidence-based programs such as FRIENDS for Life.

Recommendation 9: Continue to Promote and Support Health in Schools

Build on the successes evident to date and ensure the continued promotion and support of health in schools. This would include supporting the continued growth of the Healthy Schools Network, continued support for the new physical activity initiative (K-12), and continued support for the partnership between health and education.

Recommendation 10: Provide Healthy Programs to All Aboriginal and Independent Schools

Ensure Aboriginal band schools and independent schools have access to all public school health initiatives and programs.

Organization of the Report

This update to the 2003 *Ounce of Prevention* report is organized into several major chapters. The first chapter provides an introduction, the framework, preliminary discussion, and key data sources. Chapter 2 provides information on the importance of educational achievement to current and future health and looks at how students are doing based on several key educational indicators. Chapter 3 describes how students perceive their own health and conditions based on a variety of key indicators. These sections provide a context for the remainder of the report.

Chapter 4 summarizes a variety of key health-related behaviours, including: physical activity, nutrition, and weight; mental and emotional health; substance use; sexual health; and the school environment. Chapter 5 discusses the importance of the school environment. This chapter looks at school attachment, engagement, and connectedness as key assets for promoting the health of students and assisting them in developing resiliency, and as a protective factor for students, especially for those students who are marginalized. Chapter 6 provides a brief review of recent evidence-based initiatives elsewhere, a summary of the recommendations and actions of the previous report, and an overview of what has been implemented within the BC school system since 2003. Finally, Chapter 7 provides a set of new recommendations for what else might be done within the school setting to continue improvements to the health of our children and youth.

Provincial Health Officer's Reports

Since 1993, the Provincial Health Officer has been required by the Health Act to report annually to British Columbians on their health status and on the need for policies and programs that will improve their health. Some of the reports produced to date have given a broad overview of health status while others have focused on particular topics such as food, health and well-being, air quality, drinking water quality, immunization, injection drugs, First Nations health, injury prevention, and school health. Reports by the Provincial Health Officer are one means for reporting on progress toward the provincial health goals, which were adopted by the province in 1997.

Copies of the Provincial Health Officer's report are available free of charge from the Office of the Provincial Health Officer by calling (250) 952-1330 or at www.healthservices.gov.bc.ca/pho

Chapter 1

Introduction

Under the United Nations Convention on the Rights of the Child, every child has the right to thrive. We all want our children to develop into caring, compassionate, and productive adults. They too have hopes, dreams, and aspirations that they would like to achieve. It is important that we as parents and adults and members of a broader civil society help them to achieve their goals. A recent report, *Growing Up in North America: Child Health and Safety in Canada, the United States, and Mexico* (Canadian Council on Social Development, 2007), noted that "If our children do not thrive, our societies will not thrive." All members of society and institutions, therefore, have more than an altruistic or moral reason for wanting our children to develop into successful adults.

In October 2003, the report *An Ounce of Prevention: A Public Health Rationale for the School as a Setting for Health Promotion* was released. The report focused on missed opportunities to enhance healthy behaviours in childhood and on how adolescence is a time of experimentation and a special time of risk as young people emerge from childhood into adulthood.

Behavioural patterns related to a variety of developmental tasks are established during childhood and adolescence and can and do affect the future of individuals. Healthy nutrition, exercise, and other behaviours often follow through into adulthood. But so do risky and unhealthy behaviours and practices. Impacts can be felt not only on the individual but on friends, families, and the wider community.

It was noted in the original report that there was extensive and robust evidence that confirmed that schools had the potential to provide an important setting to help our young people to develop and thrive in a healthy manner. With the development of government's ActNow BC health promotion goals in 2005, the schools, with support from both the Ministry of Education and the Ministry of Health, have responded in numerous ways, and have the potential to take on more.

This report updates and expands the scope of the original report. First, we recognize that education is a key health determinant. If our children are to be healthy and thrive, they need a good education. This is especially true for those children and youth who are on the margins because of a variety of challenging conditions. Second, while the key focus is still on adolescence, the province now has access to information related to students in younger grades. Kindergarten students are now assessed on several developmental dimensions within the first few weeks of entering school, and we now have a foundational basis to monitor how our youngest students mature into adolescents.

While the McCreary Centre Society Adolescent Health Surveys still form an important part of this report, we introduce users of the report to two other provincial-level surveys: The School Satisfaction Survey, which canvasses all students in Grades 3/4, 7, 10, and 12 on a variety of issues; and the Canadian Community Health Survey, which provides provincial-level data for 12- to 19-year-olds. These new data sources allow us to delve more deeply into health and development issues of younger school children as well as adolescents. They also allow us to look at trends over time to see how the healthy development of students is progressing. Monitoring, however, is not an end in and of itself. The key purpose of monitoring is to assess how we are doing, what is working well, and what

might be improved. We have access to more information now than we did with the previous report, and this will allow us to develop recommendations based on this new information and on an expanding scientific, research, and evaluation literature.

Since the release of the original *Ounce of Prevention* report (Provincial Health Officer [PHO], 2003) much has happened in child and youth health and the role of the school setting. This update explores some of the key issues in child and youth health and looks at changes that have emerged within the school setting as well as in the health of our young people. Key issues include the availability of additional survey data, the overwhelming recognition that obesity and physical inactivity and their related effects are major health concerns for children and youth, and the emergence of mental health as not only a youth and adult issue, but also a childhood condition requiring much more attention than it has received to date. Further, there is recognition that a focus on risky health behaviours without considering assets or protective factors may be detrimental to efforts to improve child and youth development and health status.

The previous report relied heavily on epidemiological data collected through the McCreary Centre Society Adolescent Health Surveys (AHS) in 1992 and 1998. Since that time, results from the third survey in 2003 have been published. In addition, the data from the 2003 AHS have been used in numerous analytical reports. This permits a 10-year overview of youth health and behaviour in the province. Two other survey data sources will be used in this update: the School Satisfaction Survey and the Canadian Community Health Survey. Both surveys are described in the section on data sources.

Since the first report, there has been a considerable increase in interest in both child and youth health issues, driven in part by four Centres of Excellence for Children's Well-Being, supported by the Public Health Agency of Canada: Youth Engagement in Toronto, Child Welfare at the University of Toronto, Early Childhood Development at the University of Montreal, and Children and Adolescents with Special Needs at Lakehead University (Public Health Agency of Canada, 2007). The Canadian Institute for Health Information (CIHI) has also produced several reports on early childhood development and youth health in Canada. These reports have given child and youth health issues increased public prominence (CIHI, 2004, 2005). In addition, several international and national reports have focused on child and youth health and development issues (Canadian Council on Social Development, 2007; Active Healthy Kids Canada, 2005, 2006, 2007). Finally, the increasing attention given to the issue of knowledge translation means that research results can now be summarized, so that they have a better chance of being used. The McCreary Centre Society, the Canadian Adolescents at Risk Research Network (CAARRN), the Canadian Research Institute for Social Policy (CRISP), and the Centre of Excellence for Child Welfare (CECW) are but four examples of this approach to disseminating research results. Sources such as these are used later in this report to supplement the survey and other data and academic research articles.

Within BC, there have been several initiatives and reports on child and youth health since 2003. In 2004, the Select Standing Committee on Health looked for effective strategies to encourage citizens to change their behaviour and adopt lifelong healthy behaviours. The Committee noted the heavy burden of chronic disease on health care and individuals. It noted "The need to act now is urgent" (p. 2). In 2005, the BC government introduced the ActNow BC initiative, partly in response to the recommendations of the Select Standing Committee report. While geared to the population at large, it has important implications for child and youth health, especially with respect to physical activity, nutrition and food security, healthy weights, tobacco use reduction, and healthy pregnancies (ActNow BC, 2006). In 2006, the Select Standing Committee on Health issued a second report that focused on the impact of childhood obesity in BC and what could be done about it.

Youth mental health has also been identified as a major health issue for students. It has been estimated that at any given time, between 14 and 15 per cent of children and youth in Canada experience mental disorders that cause significant impairment and hinder their healthy development (Waddell, Hua, Garland, Peters, & McEwan, 2007; Kutcher, 2007). Further, less than 20 per cent of those children and youth are receiving treatment. The Final Report of the Standing Senate Committee on Social Affairs, Science and Technology noted that the majority of mental health disorders affecting adults began in childhood and adolescence (Kirby & Keon, 2006). As will be noted later, steps have been taken in BC to address some of these issues.

Promotion of population health has tended to be based on a deficit model, which identifies the needs and problems of populations. Individuals and communities tend to be defined in negative terms, often ignoring positive characteristics and assets (Morgan & Ziglio, 2007). Teens, in particular, are often regarded in negative terms (Tonkin, 2005). Increasingly, however, there is a movement to consider an asset approach to health promotion, particularly for young people (Powelson & Tonkin, 2005; Miller, Mullett, & VanSant, 2006), and for very young children (Hertzman, McLean, Kohen, Dunn, & Evans, 2002). The Search Institute in the United States, for example, has identified 40 key assets for different age cohorts for children and youth (Search Institute, 2007). This report will complement the deficits approach by considering some assets as well as a "wellness" or well-being perspective, in examining the health of young people in BC (Canadian Index of Wellbeing, 2007; Foster & Keller, 2007).

In considering schools as a setting for health promotion there is a need to recognize that education is the core business of schools. Increasingly, we recognize the importance of education as a "determinant" of health. Healthy students are better learners, and better-educated individuals are healthier. Early childhood development has increasingly been recognized as an important determinant of population health, and data for BC on this issue are now more readily available. This report will thus expand on the issues covered in the 2003 *Ounce of Prevention* report.

Since 2003, the province, and the Ministry of Education in particular, have taken major positive steps to improve the health of students in the school setting. Changes to the *School Act* allow schools to be used for early learning purposes around the province. Each school district has the opportunity to develop a *StrongStart Early Learning Centre* so that pre-Kindergarten students can get an early start on learning and be more prepared for school learning. School districts are developing literacy plans for the whole community and not just for those in school.

Finally, while the focus of this report is the school setting, it is important to recognize that many other factors are important in promoting the health of students, not least of which are: the nurturing family environment; the supporting role of friends and peers; and the role that the broader community plays in the healthy development of children and youth. A school is located within a broader community, with its assets of social capital. Particularly for teens, student friends and peers are a major influence.

Key Data Sources

While the McCreary Adolescent Health Surveys (AHS) are key data sources, data from other surveys will be introduced as well. Since the 2003 *Ounce of Prevention* report, two other survey sources have emerged in terms of availability, reliability, and the ability to look at trends over time. These are the Canadian Community Health Survey (CCHS), undertaken by Health Canada, Statistics Canada and the Canadian Institute for Health Information, and the School Satisfaction Survey (SSS), reported by the BC Ministry of Education annually. While the AHS have rich data related to Grade 7 to 12 students in school, survey results are generally only available every five years; thus, the two other surveys can help to provide additional information to support the AHS. Another survey, the Safe School and Social Responsibility Survey (SSSRS), undertaken by the Institute for Safe Schools of British Columbia in conjunction with the University College of the Fraser Valley, provides additional data for students in four school districts for 2006.

In using data from the above surveys, some caution is necessary. The wording of questions is not consistent among the surveys, thus making comparison somewhat difficult. Further, some surveys canvass every student (although not all respond), while others undertake random samples to estimate the values of responses. Finally, the CCHS does not survey students *per se*, but rather youth aged 12 to 19 years, and the survey does not occur in a school setting. Where there are real differences between values for the random sample surveys, they are denoted in the written text by the use of the term "statistically significant". The key data sources used in this report are briefly described below.

McCreary Adolescent Health Surveys

The first Adolescent Health Survey (AHS) was undertaken in 1992 in schools throughout BC. Students in Grades 7 to 12 were asked a series of questions related to their physical and emotional health and behaviour. In addition, risk and protective factors that affect health in adolescence and later

life were canvassed (Tonkin, 2005). A second survey followed in 1998 and a third in 2003. A fourth is planned for 2008.[1] The 2003 survey contained approximately 140 items and over 30,000 students participated, with a total of 70,000 students participating in the three surveys combined. For comparing results, particularly over time, or between different groups of students (e.g., males and females), surveys of this nature are important. Not all school districts in the province have participated in the surveys, thus leaving some geographical "gaps" in coverage (Green, n.d).

Canadian Community Health Survey

The Canadian Community Health Survey (CCHS) is undertaken by Statistics Canada on a regular basis across Canada. The survey first started in 2000/2001 and was followed up with key surveys in 2003 and 2005. There is a standard set of questions asked of all participants 12 years and over, and provinces can opt for extra modules of questions dealing with a variety of health factors. For example, in the 2005 survey, BC purchased several additional modules related to social supports. In the 2005 survey, more than 14,000 BC residents participated, but the numbers for youth were substantially less (approximately 2,000). The CCHS Survey has some limitations; for example, the survey excluded individuals living in institutions (e.g., care or health institutions, jails) or on Indian reserves or Crown lands, families of full-time members of the Canadian Armed Forces, and residents of very remote regions.

School Satisfaction Survey

Since the 2000/2001 school year, the BC Ministry of Education has undertaken surveys of students in Grades 3/4,[2] 7, 10, and 12 to measure various issues related the schools, including health and safety (e.g., bullying) and the school environment. These surveys are carried out annually and are provided to students, teachers, and parents. All students in the specified grades are invited to participate, but not everyone does. Participation rates tend to decrease in the higher grades. Nevertheless, there is remarkable consistency in results over time, suggesting that there is little bias resulting from students' participation rates. Because all students are asked to participate, unlike the AHS and CCHS, confidence intervals are not required. This is a very rich data set that has not been used very much to date. For the 2006/2007 survey, 1,448 out of 1,464 eligible public schools (98.9 per cent) participated in the survey.[3]

Safe Schools and Social Responsibility Survey

This new survey was first administered in 2006 and has undergone refinement for some questions for the 2007 survey. Four large school districts from the Lower Mainland, Vancouver Island, and the Interior have been canvassed. As the title suggests, the main thrust of the survey is safety and social responsibility. More than 70 questions are included in the survey, and most have distinct components. In 2006, all secondary students in the four school districts were surveyed (approximately 35,000 students).[4]

Other Data Sources

A variety of other data sources were used within this report, including: educational achievement (Ministry of Education); teen pregnancy (Ministry of Health); sexually transmitted diseases (British Columbia Centre for Disease Control); readiness to learn using the Early Development Instrument (Human Early Learning Partnership, University of British Columbia); Canadian Tobacco Use Monitoring Survey (CTUMS); and children in care of the state (Ministry of Children and Family Development). In addition, data are also presented from a series of published reports and fact sheets, which are noted within the body of this report.

[1] *The McCreary Centre Society has published many reports and fact sheets based on these survey data. These reports can be found on the Centre's website at http://www.mcs.bc.ca/.*

[2] *Grade 3 students are surveyed if there are no Grade 4 students in the school.*

[3] *Data for school districts and individual schools can be accessed at the Ministry of Education website at http://www.bced.gov.bc.ca/reporting/surveys/sat-bas.php.*

[4] *The substance use data used in this report do not include the survey results from the Interior school district.*

Chapter 2

The Importance of Education for Health

Health and education are inextricably linked. Those with a good education have better health status because of a variety of factors. As a key determinant of health, education affects many of the other key determinants such as employment, income, housing, improved coping strategies, health literacy, and social status, among others. Youth who drop out of high school in Canada have poorer health and family functioning as adults, are more likely to end up in the correctional system, and are substantially more likely to be on income assistance for long periods of time (Representative for Children and Youth & PHO, 2007). Education can help limit the amount of risky behaviour of students. In short, academic success influences future life choices (Mechanic, 2007). Among the many health determinants, early childhood development has a wealth of robust research that shows its foundational importance to educational success.

Early Childhood Development

In 2004, the Canadian Institute for Health Information released its report, *Improving the Health of Canadians*. This report noted that:

- Early childhood experiences have an important impact on health throughout a person's life.
- Some Canadian children face greater risks to health and development because of poorer life experiences such as low income and inadequate parenting.
- Consequences of poor early childhood development can include restricted brain development, reduced language development, capacity to communicate and literacy; and poorer physical and mental health throughout life (p. 53).

In the fall of 2004, British Columbia became the first jurisdiction worldwide to produce population-based maps of early childhood development (Kershaw, Irwin, Trafford, & Hertzman, 2005). Development was based on five dimensions of what has become known as the Early Development Instrument (EDI): physical well-being; social competence; emotional maturity; language and cognitive development; and communication and general knowledge. Much testing and research has confirmed that the EDI is a valid instrument for measuring school readiness at the group level, but it is not a diagnostic tool for individuals.

One-third of all children in BC were assessed using the EDI within a relatively short time of entering Kindergarten, and children who are in the bottom 10 per cent on any dimension are categorized as being "vulnerable". Approximately 75 per cent of Kindergarten students in BC were fully ready to learn, indicating that 3 in every 4 Kindergarten students had no vulnerability on any of the 5 dimensions. Throughout the province, there were major differences geographically among school districts, with a range from 87 per cent to 43 per cent of students ready to learn (Figure 2.1). Analysis has also shown that readiness to learn is influenced by a variety of neighbourhood characteristics such as income, employment, occupation, domestic work, family structure, immigration, residential stability, and group membership (Kershaw et al., 2005). This variation suggests that there are opportunities for major improvements in the readiness of children to learn.

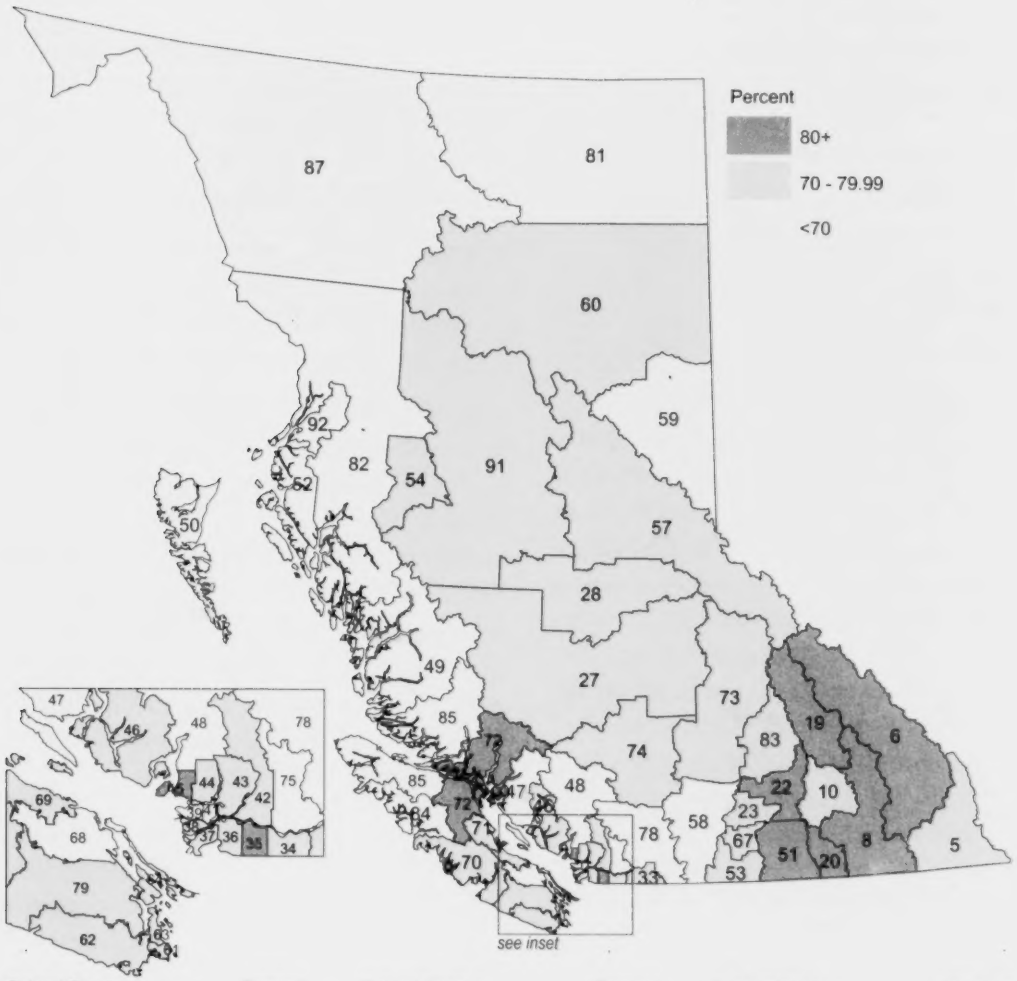
Figure 2.1

Overall Readiness to Learn, 2002

School District	Percent	School District	Percent	School District	Percent
045 West Vancouver	86.86	061 Greater Victoria	75.59	078 Fraser-Cascade	69.63
020 Kootenay-Columbia	84.76	053 Okanagan Similkameen	75.59	068 Nanaimo-Ladysmith	69.45
006 Rocky Mountain	83.44	073 Kamloops/Thompson	75.57	059 Peace River South	69.09
072 Campbell River	81.75	071 Comox Valley	75.38	082 Coast Mountains	69.06
019 Revelstoke	80.90	054 Bulkley Valley	75.32	050 Haida Gwaii/Queen Charlotte	68.85
022 Vernon	80.82	057 Prince George	75.13	058 Nicola-Similkameen	68.75
035 Langley	80.56	010 Arrow Lakes	75.00	047 Powell River	68.08
051 Boundary	80.54	070 Alberni	74.69	048 Howe Sound	67.92
008 Kootenay Lake	80.35	063 Saanich	74.57	040 New Westminster	67.87
044 North Vancouver	79.79	046 Sunshine Coast	74.57	041 Burnaby	67.31
043 Coquitlam	79.23	036 Surrey	74.26	075 Mission	67.23
005 Southeast Kootenay	78.67	033 Chilliwack	74.05	081 Fort Nelson	67.12
083 North Okanagan-Shuswap	78.62	028 Quesnel	73.82	085 Vancouver Island North	65.68
037 Delta	77.66	023 Central Okanagan	73.39	087 Stikine	63.16
062 Sooke	76.66	034 Abbotsford	73.35	052 Prince Rupert	59.82
060 Peace River North	76.34	027 Cariboo-Chilcotin	72.86	084 Vancouver Island West	59.38
079 Cowichan Valley	76.33	069 Qualicum	72.66	039 Vancouver	59.06
064 Gulf Islands	76.00	067 Okanagan Skaha	72.53	049 Central Coast	47.06
091 Nechako Lakes	76.00	074 Gold Trail	72.03	092 Nisga'a	42.86
042 Maple Ridge-Pitt Meadows	75.70	038 Richmond	70.42	093 Province (Public Only)	73.67

Figure 2.1

Overall Readiness to Learn, 2002



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042 Maple Ridge-Pitt Meadows	75.70	038 Richmond	70.42	093 Province (Public Only)	73.67

Source: Hertzman et al., 2002

The Role of Education in Determining Health

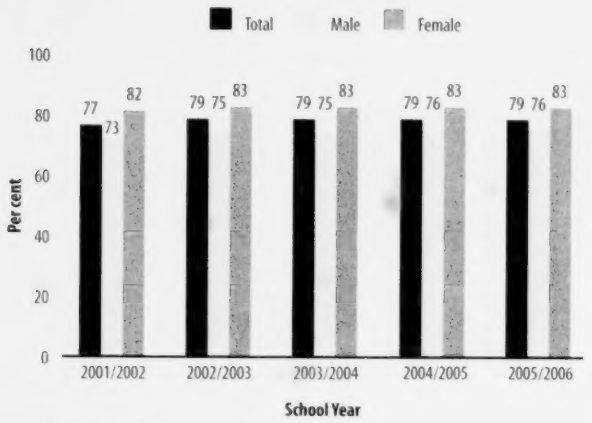
While healthy early childhood development is a first step in readiness to learn in an educational setting, education affects many of the other determinants of health and is viewed as a "central point of leverage" in population health (Mechanic, 2007). It has been noted that "educational attainment is associated with almost every measure of population health and well-being" (Representative for Children and Youth & PHO, 2007, p.2).

Given the role of education as a key determinant of health, it is important to assess how students are doing in achieving educational milestones. There are several key indicators, including Grade 12 graduation within six years of entering Grade 8, Foundation Skills Assessments (FSAs) in earlier grades, and grade-to-grade transitions.

Grade 12 Completion Rates

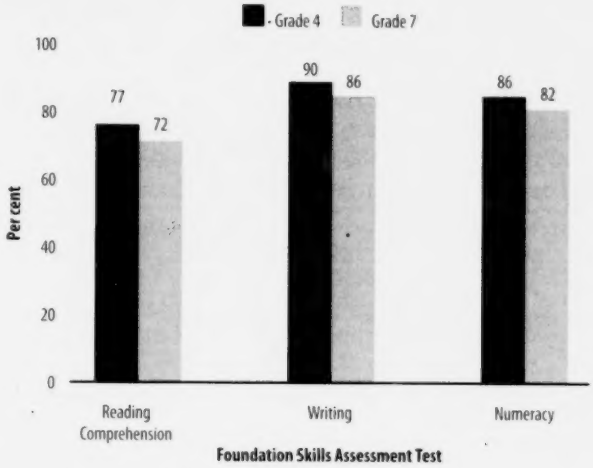
Between 2001/2002 and 2005/2006, Grade 12 completion rates for public and independent schools have hovered around 79 per cent, with female students on average outperforming male students, although the gap has narrowed since 2001/2002 (Figure 2.2). Independent schools, however, have consistently outperformed public schools (87 per cent versus 78 per cent in 2005/2006). Aboriginal students underperform on this indicator (53 per cent female and 42 per cent male) but have shown consistent improvement over the last five years. English as a Second Language (ESL) students do as well as non-Aboriginal students, and French Immersion students consistently do the best of all, although there has been a reduction in graduation rates for French Immersion students between 2001/2002 and 2005/2006 (Ministry of Education [MEd], 2006b).

Figure 2.2 **Dogwood Completion Rate, 2001/2002 - 2005/2006**



Source: Ministry of Education, 2006b.

Figure 2.3 **Foundation Skills Assessments, 2006/2007 (Grade 4 and Grade 7)**



Source: Ministry of Education, 2007.

Foundation Skills Assessment

Foundation skills are assessed in Grades 4 and 7 for reading comprehension, writing, and numeracy. Approximately 77 per cent, 90 per cent, and 86 per cent of participating Grade 4 students have met or exceeded expectations for reading comprehension, writing, and numeracy respectively. A lower percentage of Grade 7 students met or exceeded expectations (Figure 2.3). There have not been consistent trends in results over recent years in the FSAs. Female students outperform male students for reading and writing, while males do better for numeracy in Grade 4 but not in Grade 7. Again, independent schools perform better, while French Immersion students outperform others except in Grade 4 writing. Fewer Aboriginal students meet expectations for both grades, as do ESL students, except for Grade 4 writing. Grade 4 ESL and French Immersion students have similar skill levels as the rest of the non-Aboriginal students for writing.

One caution on reporting FSA scores concerns the percentage of children participating in the assessments. In recent years, the non-participation rate has increased, and disadvantaged and marginalized students, such as those in government care or who are street-involved, are less likely to take the FSA; thus, at the provincial level, the percentage of students who meet assessment expectations is overestimated (Representative for Children and Youth & PHO, 2007). There is clearly a need for better participation rates to give a truer assessment of how students in the province overall are progressing, and reporting of these results should include all children in the cohort, not just those who took the test.

Grade-to-Grade Transition

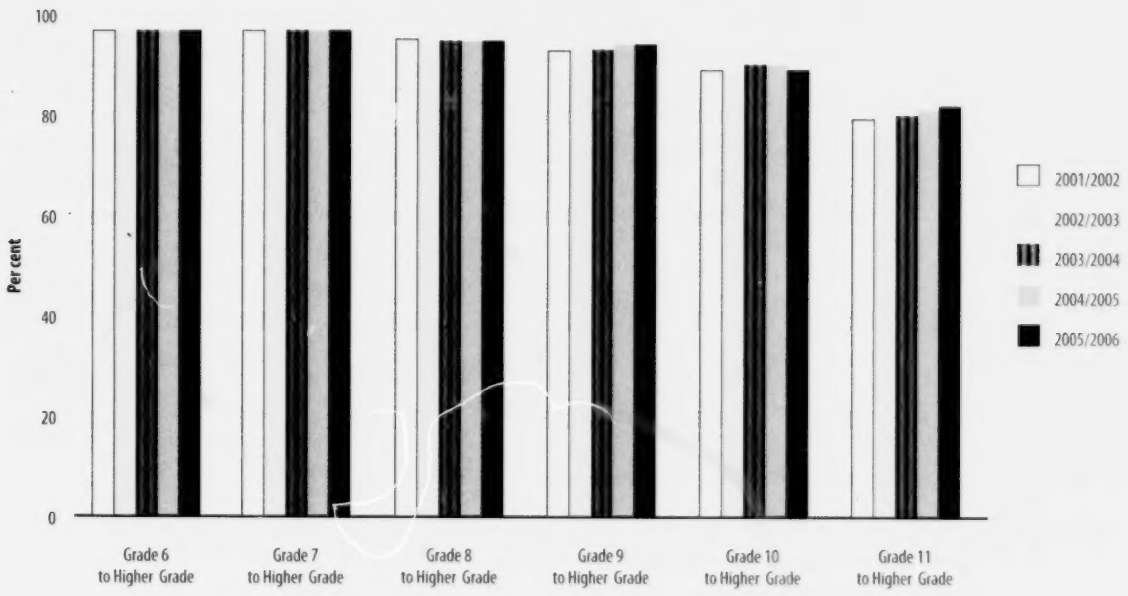
The transition from one grade to the next is an important indicator of students' progress within the educational system. Transition between grades generally falls from a high of 97 per cent for both Grade 6 and 7 students to 95 per cent for Grade 8; by Grade 11, the transition is around 80 per cent (Figure 2.4). There have been consistent improvements, however, over the last five years in transitioning from Grade 11.

Transition rates have tended to be slightly higher for female students, but the gap has narrowed in the last two years. For Aboriginal students, the transition rates are substantially less than those for non-Aboriginal students, especially from Grade 8 onwards. Rates are also consistently lower for ESL students, while rates for French Immersion students are consistently high (MEd, 2006a).

Analysis of age-appropriate grade levels shows some major variations among students based on issues of relative disadvantage (Danderfer, Wright, & Foster, 2006). For the 2005/2006 school year, 93 per cent of students were in the appropriate grade for their age. However, the rate of age-appropriate grade levels for those with certain socio-economic disadvantages is lower compared to non-disadvantaged children (87 per cent) (Figure 2.5). These disadvantages include: living in families on income assistance; being in government care; being in a "kith and kin" living arrangement (rather than being in government care); being on a supervision order (where the Ministry of Children and Family Development keeps oversight of a child's well-being); or being on a youth agreement (where the youth

Figure 2.4

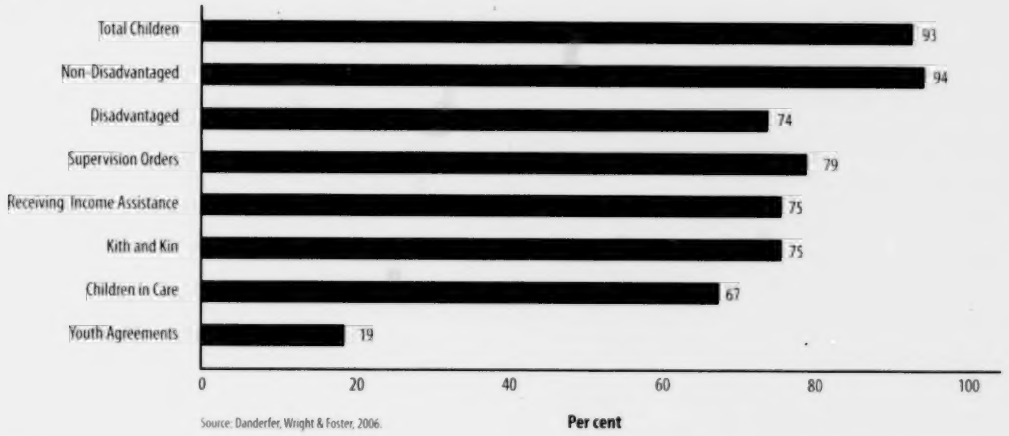
Grade-to-Grade Transition Rate, 2001/2002 - 2005/2006 (Public Schools Only)



Source: Ministry of Education, 2006a.

Figure 2.5

Percentage of Children at Age-Appropriate Grade Level, 2005/2006

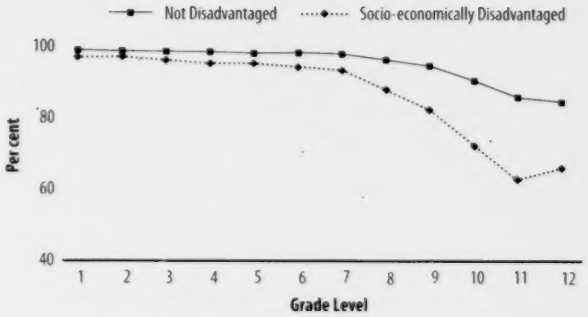


Source: Danderfer, Wright & Foster, 2006.

lives independently, but is under 19 years of age). The rate for self-identified Aboriginal students (89 per cent) is not much better, and it suggests that Aboriginal students could be viewed as "disadvantaged" on this indicator. Further, the rate falls substantially from about Grade 7 onwards; by Grade 11 and 12, only about 65 per cent of disadvantaged students are in an age-appropriate grade (Figure 2.6).

Figure 2.6

Percentage of Children at Age-Appropriate Grade Level, 2005



Source: Danderfer, Wright & Foster, 2006.

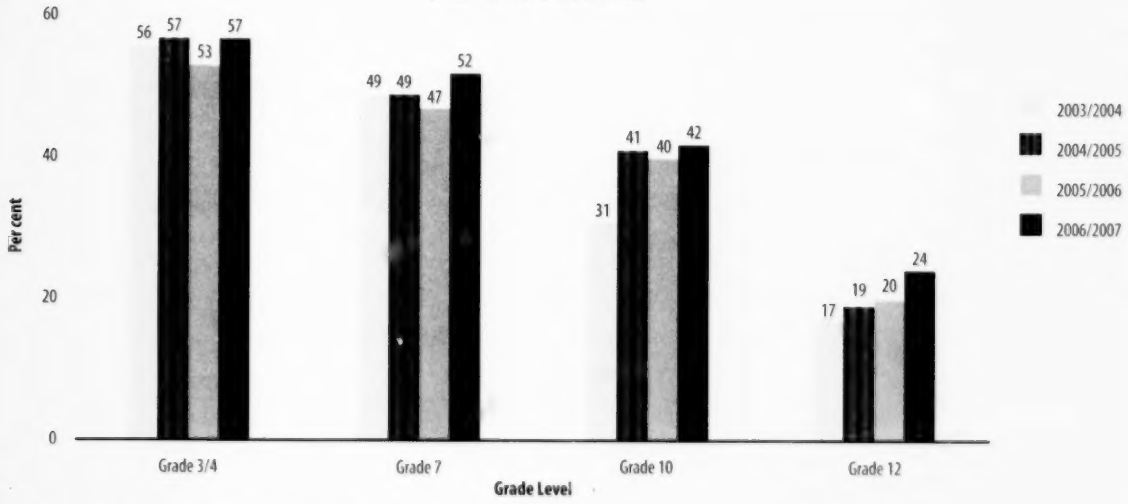
Health Learning at School

The School Satisfaction Survey canvassed students about health learning at school (Figure 2.7). Grade 3/4 students were asked a slightly different question ("At school are you learning about healthy food and exercise?") than the higher grade level students ("At school, are you learning about how to stay healthy?"). In considering the responses over the time period (2003/2004 to 2006/2007) positive responses declined at higher grade levels, from over 50 per cent for Grade 3/4 students to just over 20 per cent for Grade 12 students. For Grades 3/4, 7, and 10, female students replied slightly more positively than males, but for Grade 12 students, males had a more positive response. Over time, there has been an increase in positive responses for Grades 12 and 7, while for Grade 10, there was a large increase between 2003/2004 and 2004/2005, but positive responses have remained constant at around 40 per cent since that time.

These results suggest that more effort is required within schools with respect to education about health, particularly for Grade 12 students, with only about one in five students indicating they were learning how to stay healthy at school.

Figure 2.7

Health Learning at School, 2003/2004 - 2006/2007
(Grades 3/4, 7, 10, and 12)



Source: Ministry of Education, School Satisfaction Survey, 2003/2004-2006/2007.

Chapter 3

How Do Students Rate Their Health and Well-Being?

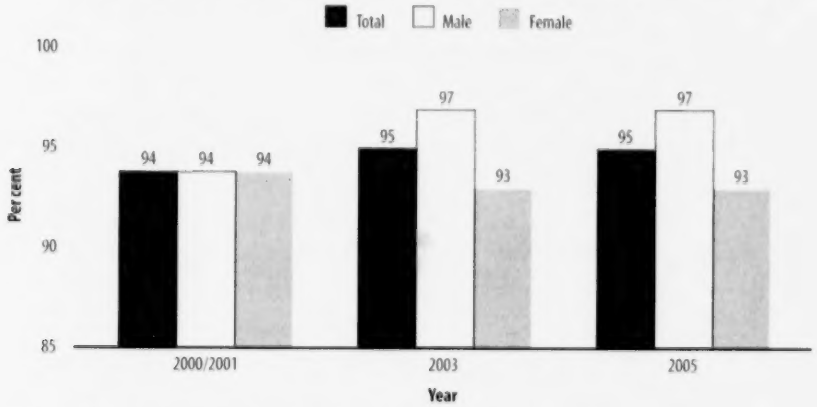
As a starting point, results from several surveys provide a context of how students and youth rate their own health and well-being in BC. Geographical variations in these indicators are noted in this section to show the importance of location and geography. The results for all indicators are available at the Health Service Delivery Area (HSDA) level for the 2003 AHS and the 2005 CCHS (Foster & McKee, 2007). Comparisons with older age groups for the CCHS are also available (Foster & Keller, 2007).

Self-Rated Health

Based on the McCreary AHS, students have shown little change over time in how they rate their health status. In 1992, 86 per cent rated their physical health as excellent or good, with 87 per cent rating it so in 1998 and 86 per cent in 2003. Proportionally more males rate their health as good to excellent compared to females (89 per cent versus 83 per cent in 2003) (Tonkin, 2005).

Results from the CCHS showed higher percentages of youth respondents rating their health as excellent, very good, or good for the 2000/2001, 2003, and 2005 surveys (Figure 3.1). As with the AHS results, the CCHS results showed that higher percentages of male respondents indicated excellent to good health, but these differences were not statistically significant. When compared to respondents who were age 20 or older, teens had significantly higher levels of self-rated health. Geographically, there were regional variations in self-rated health (Figure 3.2). Analysis by HSDA for 2005 shows that the values for excellent to good health ranged from a high of nearly 99 per cent to a low of less than 88 per cent throughout the province, and that southeast and northwest BC had significantly higher levels of excellent to good health than elsewhere in the province.

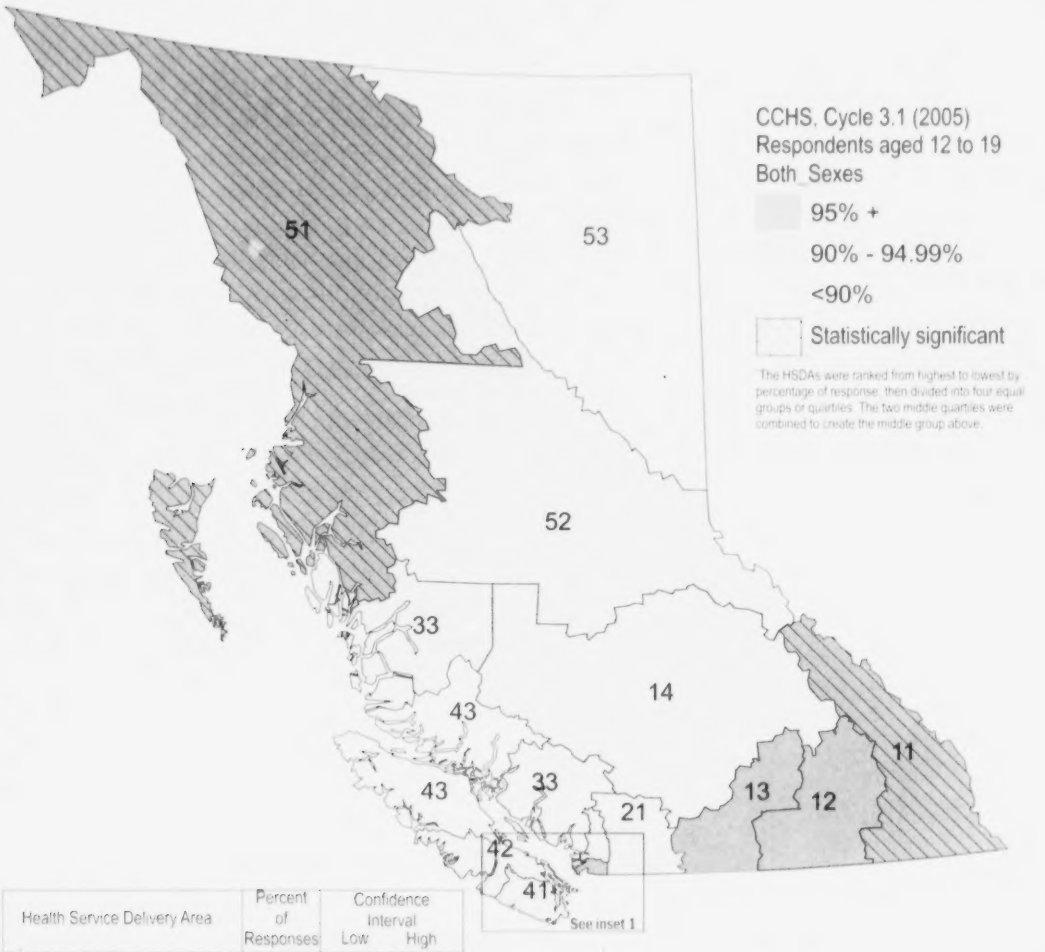
Figure 3.1 **Good to Excellent Self-Rated Health in BC, 2000/2001 - 2005 (Age 12 to 19 Years)**



Source: Canadian Community Health Survey, Share File Cycles 1.1, 2.1, and 3.1

Figure 3.2

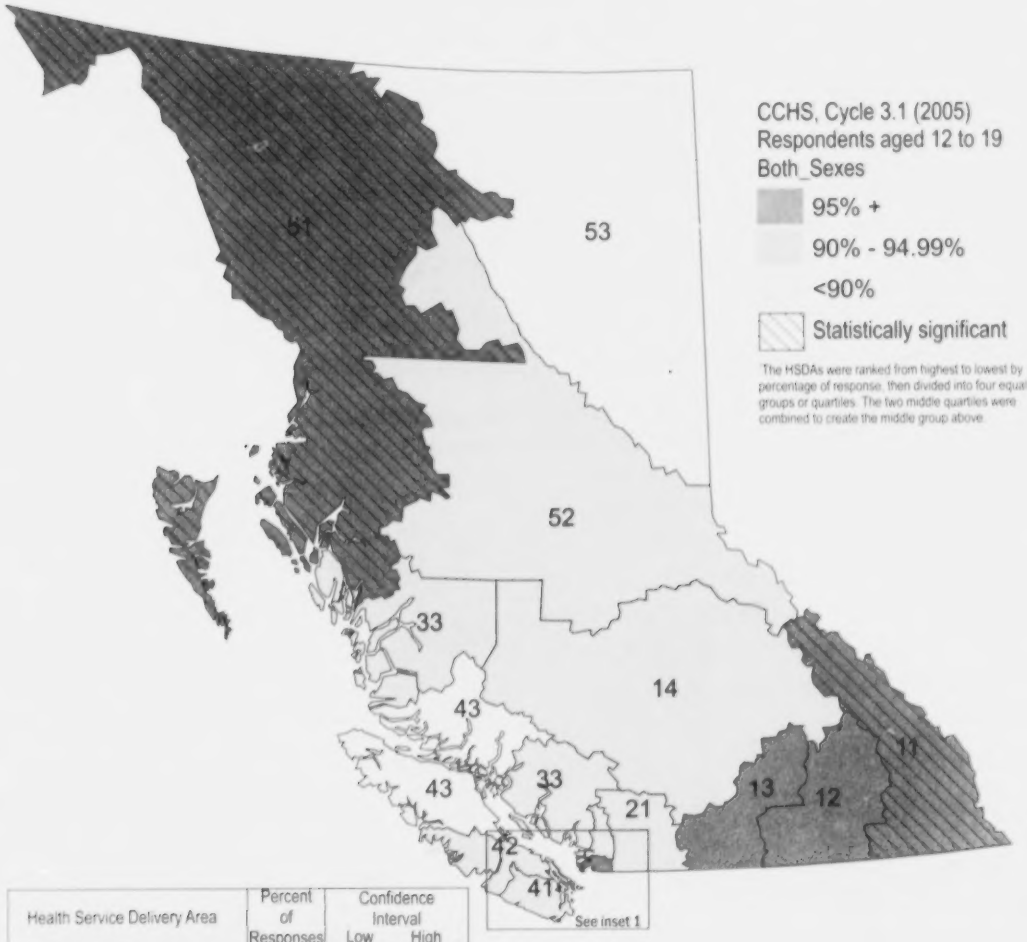
Self-Rated Health, Good to Excellent, 2005



Health Service Delivery Area	Percent of Responses	Confidence Interval Low	High
11 East Kootenay	**98.66**	**96.61**	**100.72+**
51 Northwest	**98.30**	**96.65**	**99.95 +**
23 Fraser South	**97.12**	**95.15**	**99.08**
12 Kootenay Boundary	**96.45**	**89.99**	**102.92**
13 Okanagan	**96.16**	**92.06**	**100.26**
31 Richmond	95.96	90.74	101.18
41 South Vancouver Island	95.89	91.46	100.32
14 Thompson Cariboo Shuswap	95.43	91.53	99.34
52 Northern Interior	94.74	88.84	100.63
32 Vancouver	94.30	89.10	99.49
22 Fraser North	94.29	88.21	100.38
33 North Shore/Coast Garibaldi	92.90	87.29	98.51
21 Fraser East	92.30	84.82	99.77
42 Central Vancouver Island	90.51	83.37	97.64
53 Northeast	87.69	78.85	96.52
43 North Vancouver Island	86.13	75.36	96.90
99 British Columbia	94.54	93.01	96.07

Confidence Interval (CI) is the term used when percentages are calculated based on a sample of the population. CIs estimate the margin of error and show the range within which the true percentage lies (listed in the table as low and high). These are 95% CIs, meaning that if this sample, if repeated, would produce results in this range 95 out of 100 times.
E: interpret data with caution (16.7% coefficient of variation: 33.3)
F: Data suppressed due to Statistics Canada sampling rules
+: indicates HSDA percentage is statistically significantly higher than the provincial rate
-: indicates HSDA percentage is statistically significantly lower than the provincial rate
Map prepared with data from Statistics Canada, Canadian Community Health Survey, Cycle 3.1, (2005)

Figure 3.2 **Self-Rated Health, Good to Excellent, 2005**



Health Service Delivery Area	Percent of Responses	Confidence Interval Low	High
11 East Kootenay	98.66	96.61	100.72+
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33 North Shore/Coast Garibaldi	92.90	87.29	98.51
21 Fraser East	92.30	84.82	99.77
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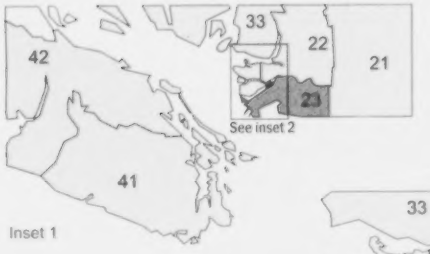

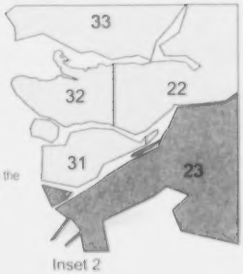

Confidence Interval (CI) is the term used when percentages are calculated based on a sample of the population. estimate the margin of error and show the range within which the true percentage lies (listed in the table as low and high). These are 95% CI's, meaning that this sample, if repeated, would produce results in this range 95 out of 100 times.
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F Data suppressed due to Statistics Canada sampling rules.
+ indicates HSDA percentage is statistically significantly higher than the provincial rate.
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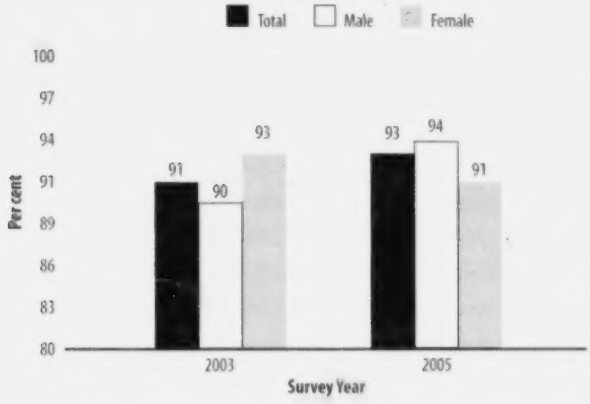
Map prepared with data from Statistics Canada, Canadian Community Health Survey, Cycle 3.1 (2005).

Figure 3.3 Good to Excellent Self-Rated Mental Health, 2003 and 2005 (Age 12 to 19 Years)



Source: Canadian Community Health Survey, Share File Cycles 2.1 and 3.1.

Self-Rated Mental Health

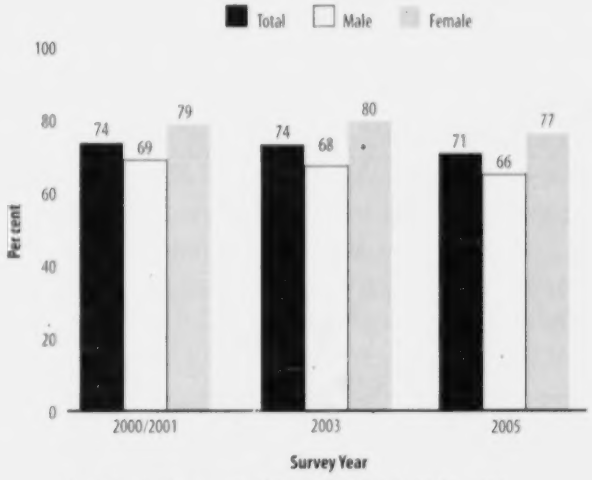
Between the 2003 and 2005 CCHS, youth respondents rating their mental health as excellent, very good, or good increased from 91 per cent to 93 per cent (Figure 3.3). While females indicated slightly better mental health than males in 2003, this reversed in 2005, with males indicating higher levels of mental health than females. None of these differences, however, were statistically significant. In 2005, the range in values among HSDAs for all 12- to 19-year-olds went from a low of 87 per cent to a high of nearly 99 per cent. East Kootenay and Northwest HSDAs both had significantly higher levels of self-rated mental health than other youth in the province.

Injuries

Respondents were asked if they had injuries in the past 12 months that were serious enough to limit normal activities. Between 2000/2001 and 2005, there was a slight reduction in the percentage of youth reporting that they had been injury-free (not having an injury requiring medical attention) (Figure 3.4). In each of the three CCHS surveys, the percentage of males reporting injury-free status was lower than the percentage of females. This difference is consistent with other Canadian studies (Canadian Adolescents at Risk Research Network [CAARRN], 2004a). The range of injury-free rates for youth in 2005 across HSDAs went from 62 per cent to 81 per cent. The 2003 AHS suggests that most injuries are related to sports or recreation activities (55 per cent) and to biking, rollerblading, or skateboarding (14 per cent). Motor vehicles and fighting were each responsible for 5 per cent of injuries (McCreary Centre Society, 2004b).

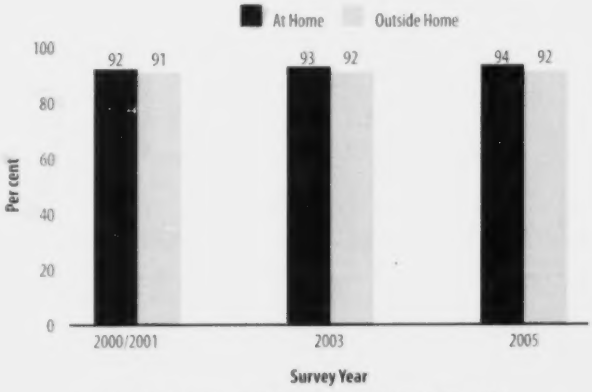
When asked if a long-term physical or mental condition or health problem reduced the kind of activity they could either do at home or outside the home (e.g., transportation, leisure pursuits), there was little change over the three survey years among youth respondents (Figure 3.5). In 2005, 94 per cent (HSDA range of 85 per cent to 96 per cent) and 92 per cent

Figure 3.4 Percentage Reporting Injury-Free Status, 2000/2001- 2005 (Age 12 to 19 Years)



Source: Canadian Community Health Survey, Share File Cycles 1.1, 2.1, and 3.1.

Figure 3.5 Percentage Reporting No Long-Term Condition That Reduced Activity, 2000/2001 - 2005 (Age 12 to 19 Years)



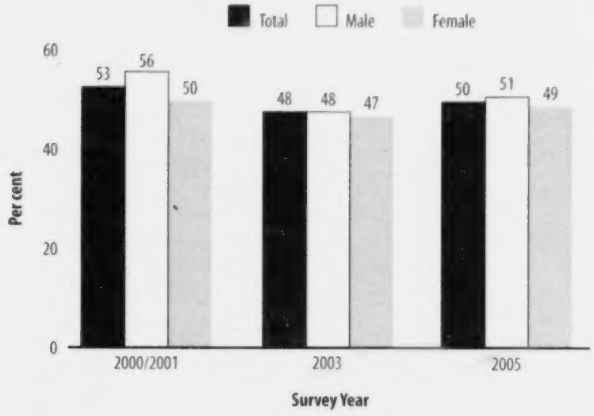
Source: Canadian Community Health Survey, Share File Cycles 1.1, 2.1, and 3.1

(HSDA range of 77 per cent to 96 per cent) of youth answered "never", to having restrictions at home or outside the home, respectively. These were significantly higher percentages than for older age respondents. Males reported marginally higher levels of being free of restrictions than females.

Chronic Conditions

This indicator involved responses to over 30 individual questions concerning different chronic conditions, including food allergies, asthma, diabetes, epilepsy, eating disorders, and several mental conditions such as anxiety and mood disorders. The percentage of respondents with chronic-free conditions fell between 2000/2001 and 2003 but increased in 2005. In 2003, about 48 per cent of youth reported no chronic conditions. Females consistently had lower levels of chronic-free status than males (Figure 3.6). In 2005, the range in responses among HSDAs varied from 37 per cent to over 58 per cent, and South Vancouver Island HSDA had a significantly lower percentage of respondents who were free of chronic conditions compared to the provincial average. Relative to older age groups, 12- to 19-year-olds were more likely to be free of chronic conditions.

Figure 3.6 **Percentage Reporting No Chronic Conditions, 2000/2001 - 2005 (Age 12 to 19 Years)**



Source: Canadian Community Health Survey, Share File Cycles 1.1, 2.1, and 3.1.

Life Satisfaction

Table 3.1 shows the 2005 CCHS results for young people between the ages of 12 and 19 years who indicated that they were very satisfied or satisfied with their life. In 2005, just over 91 per cent (HSDA range of 87 per cent to 97 per cent) answered that they were satisfied with their life; this was marginally higher than the 90 per cent result in 2003. Males showed higher levels of satisfaction than females, consistent with other Canadian studies (CAARRN, 2004b). Approximately 97 per cent of youth in Kootenay Boundary HSDA indicated that they were satisfied with their life; this was significantly higher than the provincial average for youth.

Table 3.1 **Very Satisfied or Satisfied With Life in General, 2005**

Health Service Delivery Area	Total %	Male %	Female %
Kootenay Boundary	97.4	*	97.5
North Vancouver Island	95.0	94.8	*
North Shore/Coast Garibaldi	94.6	98.0	91.0
Northwest	93.6	93.7	93.4
Thompson Cariboo Shuswap	93.3	95.7	90.8
Northern Interior	92.9	97.2	88.3
Vancouver	92.6	92.8	92.3
Central Vancouver Island	91.7	91.7	91.7
Northeast	91.3	*	86.2
Richmond	91.3	95.3	87.1
Fraser South	90.9	90.4	91.4
Okanagan	90.7	89.9	91.5
East Kootenay	90.5	*	*
Fraser East	90.4	96.2	84.2
South Vancouver Island	90.0	90.2	89.8
Fraser North	87.1	94.1	79.6
British Columbia	**91.3**	**93.2**	**89.3**

* Suppressed due to Statistics Canada sampling rules.

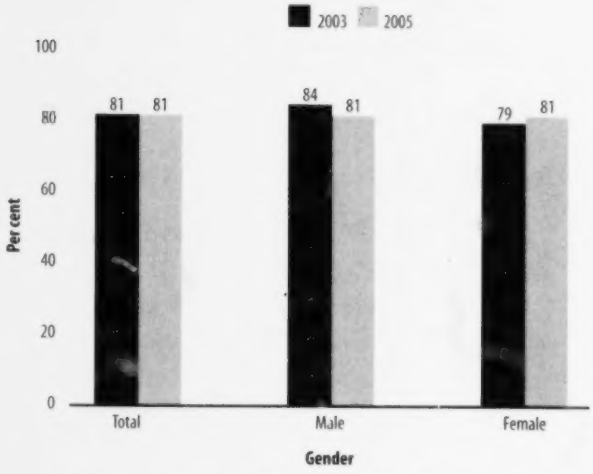
Source: Canadian Community Health Survey, Share File Cycle 3.1.

Health Utilities Index

The Health Utilities Index (HUI) provides a summary score based on a variety of factors. These include: sensation (seeing, hearing, speaking); mobility; dexterity; emotion (happiness); cognition (learning and remembering); and pain status. A score of 0.8 or higher is considered to represent a high level of health (Horsman, Furlong, Feeney, & Torrance, 2003). The CCHS asked questions to assess this index for BC youth in 2003 and 2005. In both years, 81 per cent of youth scored 0.8 or higher; male respondents scored higher in 2003, while female respondents scored higher in 2005 (Figure 3.7). None of the differences were statistically significant. The range of values in 2005 among HSDAs went from 61 per cent to 89 per cent, but only North Vancouver Island HSDA was significantly lower than the provincial average. The HUI for the 12–19 age group was not significantly different when compared to the 20–64 age group, but was much better than the 65 and over age group.

In summary, as might be expected, students and youth rated their health and well-being quite high, although about half of the respondents indicated they had some type of chronic condition. Females generally reported lower health status, except for injuries, and there were notable geographical variations in reported health status.

Figure 3.7 **Percentage With a Health Utility Index of 0.8 and Higher, 2003 and 2005 (Age 12 to 19 Years)**



Source: Canadian Community Health Survey, Share File Cycles 2.1 and 3.1

Chapter 4

Student Behaviours and Healthy Development

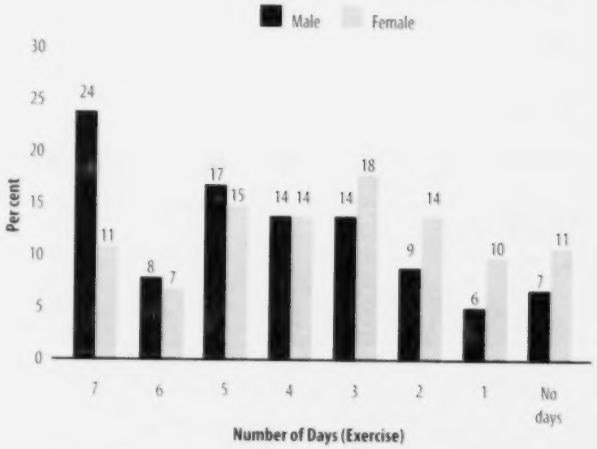
Physical Activity

Much has been written about concerns with the increasingly sedentary lifestyles of children and youth (Select Standing Committee on Health 2004, 2006). Physical inactivity of children and youth is a major concern. In its first annual report, Active Healthy Kids Canada gave the country an overall "D" grade, noting that less than half of Canada's children were active enough to maintain a healthy weight, as well as develop healthy hearts, muscles, bones, and lungs. "Canada is dropping the ball when it comes to ensuring that our children and youth are active enough each day to ensure optimal growth and development" (Active Healthy Kids Canada, 2005, p.2). In the 2007 Active Healthy Kids Canada report, Canada still received an overall "D" grade. In addition, the report noted that there was a lack of awareness of physical activity guidelines, an overestimation of the amount of physical activity in which children were engaged, and that generally within Canada, there was a perception that physical education was less important within the school setting than other activities, particularly in higher grades.

Lack of physical activity is associated with many disease risk factors, and exercise has been shown to be a protective factor for many chronic diseases and illnesses (PHO, 2006). Physical activity is an essential ingredient for healthy growth and development. Physical activity can also improve mental health, as the release of endorphins reduces anxiety, stress, and even depression. Exercise improves cardiovascular functioning and strengthens muscles. In addition, research has shown that for youth, physical recreation reduces boredom and, with it, risky behaviours (Torjman, 2004). Further, it has been suggested that the lack of physical activity is a more important factor than food choices and amount of food consumed in contributing to obesity and overweight levels among Canadian adolescents (Janssen, Katzmarzyk, Boyce, King, & Pickett, 2004). Finally, physical activity patterns tend to follow individuals into adulthood, so behaviours developed in adolescence have an important lifelong effect on health (CAARRN, 2004c).

A 2006 McCreary report summarized some key factors related to BC students' physical activity levels (McCreary Centre Society, 2006b). In each of the three AHS, less than one in five BC students responded that they exercised each day in the past week. In 1992, 19 per cent of respondents exercised daily, but this dropped to 15 per cent in 1998,

Figure 4.1 **Number of Exercise Days in the Past Week, by Gender, 2002/2003 School Year (All School-aged Children - Grades 7 Through 12)**



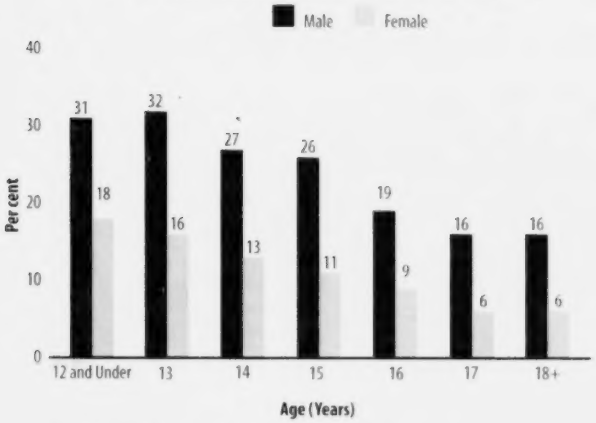
Source: McCreary Centre Society, Adolescent Health Survey, 2003.

before increasing again to 18 per cent in 2003. There were significantly more males exercising each day in 2003 than females (24 per cent versus 11 per cent), and the difference between the genders was statistically significant for each year between Grades 7 and 12 (Figure 4.1). Further, the amount of physical exercise for both males and females decreased as students got older (Figure 4.2). These results are very similar to results from the Health Behaviour in School-aged Children Survey (CAARRN, 2004c).

In both 1998 and 2003, 60 per cent of students participated on at least a weekly basis in organized physical activities (organized sports or aerobic/dance classes). As with the results for daily physical activity, participation in organized activities fell as students got older. Females, however, were more likely to participate in organized physical activities than males (Figure 4.3).

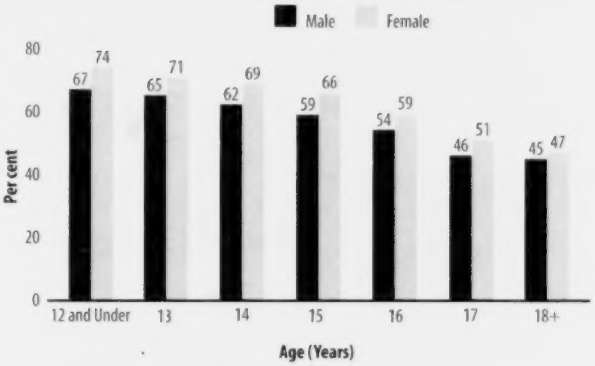
Within the school environment, involvement in exercise (physical activity or sports) falls drastically in the higher grades. In 2006/2007, over 80 per cent of those in Grades 3/4 and 7, and just over 70 per cent of those in Grade 10 were involved in school exercise. Only 36 per cent of those in Grade 12 were involved in school exercise in the same year; however, there is evidence that the percentage for Grade 12 students has increased since 2002/2003 (Figure 4.4).

Figure 4.2 **Exercised Every Single Day in the Past Week, 2002/2003 School Year (School-aged Children - Grades 7 Through 12)**



Source: McCreary Centre Society, Adolescent Health Survey, 2003.

Figure 4.3 **Weekly Participation in Organized Physical Activity, 2002/2003 School Year (School-aged Children - Grades 7 Through 12)**



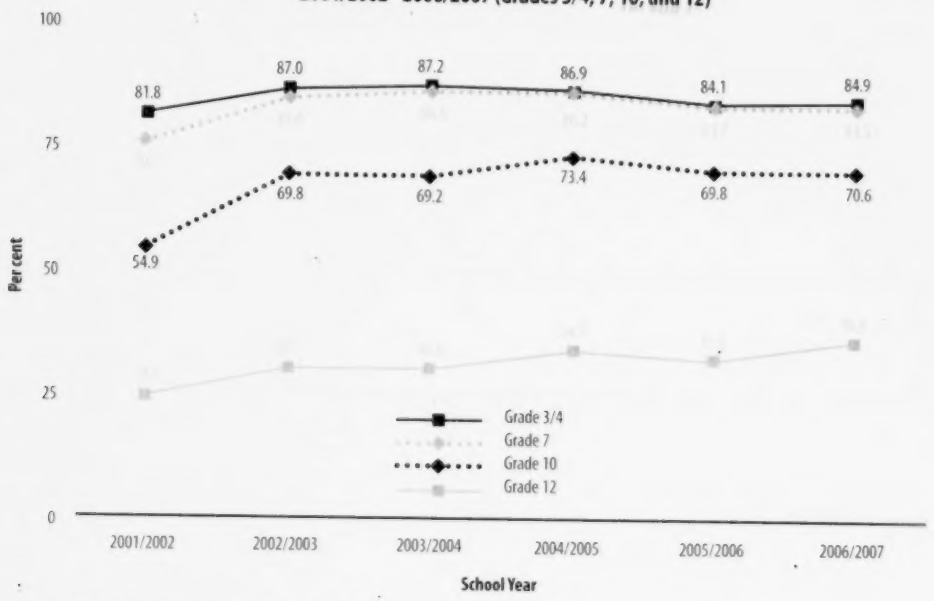
Source: McCreary Centre Society, Adolescent Health Survey, 2003.

A Physical Activity Index has been created based on responses to a series of questions in the CCHS related to frequency, duration, and intensity of participation in certain activities. For each of these activities, average energy expenditure was derived and respondents were classified as "active" if their average energy expenditure was 3 kcal/kg/day, and "moderately active" if their energy expenditure was between 2.9 and 1.5 kcal/kg/day.

More than 7 in every 10 youth (72 per cent) were classified as either active or moderately active on the Physical Activity Index, and males were more active than females (76 per cent versus 68 per cent). Geographically, the East Kootenay and Kootenay Boundary HSDAs had the most active youth, and North Vancouver Island, Northeast, and Okanagan HSDAs had the least active youth (Figure 4.5). Youth were significantly more physically active than older age group respondents, but were less likely to walk 6 or more hours a week than those aged 20 to 64 years (24 per cent versus 28 per cent), although the difference was not statistically significant.

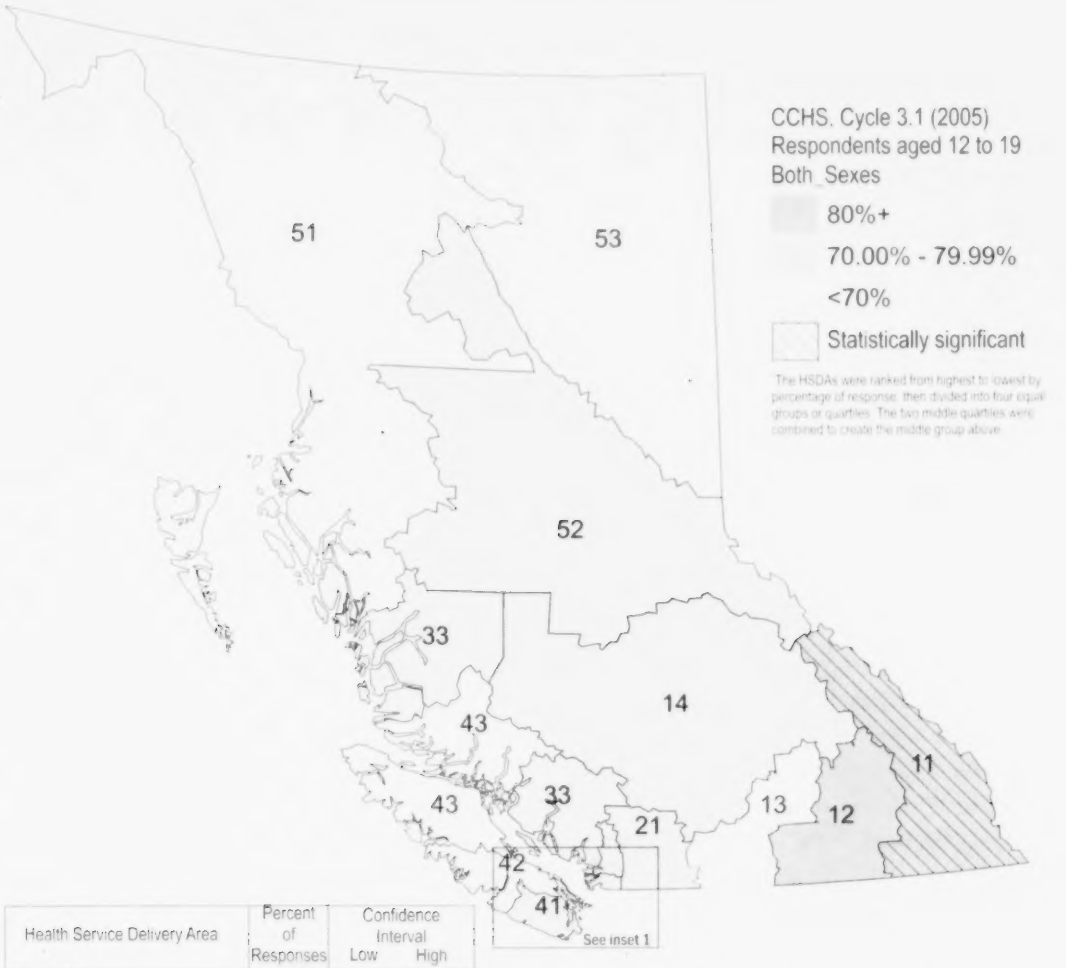
Figure 4.4

Percentage Who Exercised at School,*
2001/2002 - 2006/2007 (Grades 3/4, 7, 10, and 12)



*Percentage reporting "all of the time" or "many times" in response to the question.
Source: Ministry of Education, School Satisfaction Survey, 2001/2002-2006/2007.

Figure 4.5 Active or Moderately Active Physical Activity Index Score, 2005



Health Service Delivery Area	Percent of Responses	Confidence Interval Low	High
11 East Kootenay	86.94	76.49	97.39 +
12 Kootenay Boundary	80.31	62.16	98.46
41 South Vancouver Island	76.09	67.60	84.59
23 Fraser South	75.74	69.73	81.75
33 North Shore/Coast Garibaldi	74.41	65.71	83.11
31 Richmond	74.16	63.12	85.21
22 Fraser North	73.29	65.74	80.84
21 Fraser East	72.39	63.29	81.48
52 Northern Interior	72.17	60.70	83.64
14 Thompson Cariboo Shuswap	72.00	60.43	83.58
32 Vancouver	70.94	62.31	79.57
51 Northwest	69.06	56.68	81.45
42 Central Vancouver Island	68.13	57.47	78.80
13 Okanagan	66.44	56.78	76.09
53 Northeast	64.68	52.64	76.71
43 North Vancouver Island	57.58	44.43	70.72
99 British Columbia	72.40	69.46	75.33

Confidence interval (CI) is the term used when percentages are calculated based on a sample of the population. CI's estimate the margin of error and show the range within which the true percentage lies (listed in the table as low and high). These are 95% CI's, meaning that this sample, if repeated, would produce results in this range 95 out of 100 times.
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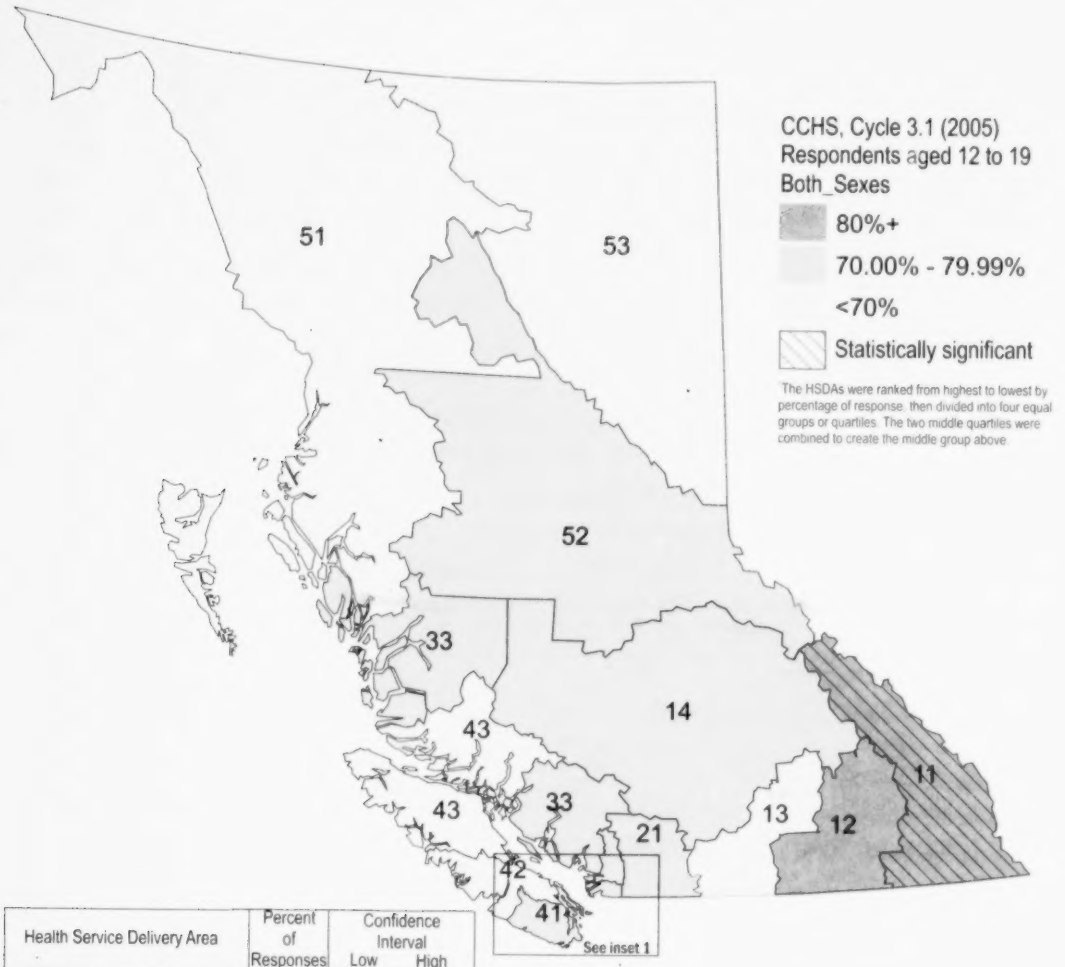
Map prepared with data from Statistics Canada, Canadian Community Health Survey, Cycle 3.1, (2005)

Figure 4.5 **Active or Moderately Active Physical Activity Index Score, 2005**



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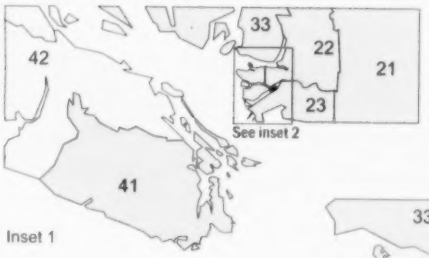
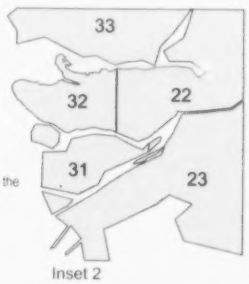




Confidence Interval (CI) is the term used when percentages are calculated based on a sample of the population. CI's estimate the margin of error and show the range within which the true percentage lies (listed in the table as low and high). These are 95% CI's, meaning that this sample, if repeated, would produce results in this range 95 out of 100 times.
E: interpret data with caution (16.77< coefficient of variation< 33.3)
F: Data suppressed due to Statistics Canada sampling rules.
+: indicates HSDA percentage is statistically significantly higher than the provincial rate.
-: indicates HSDA percentage is statistically significantly lower than the provincial rate.
Map prepared with data from Statistics Canada, Canadian Community Health Survey, Cycle 3.1 (2005).

Weight, Food, and Nutrition Issues

An individual's weight status is based on the balance between energy consumed as food and the energy burned for normal body functioning and activity (energy in = energy out). This balance can be influenced by adequate nutrition, food security, stress, and levels of physical activity. Being underweight, or overweight and obese, can pose a number of different health problems for individuals. In addition, there is growing concern about the rise in obesity levels worldwide (Raine, 2004). A recent survey of 63 nations illustrates that greater than 60 per cent of men and more than 50 per cent of women are either overweight or obese, with Canadian adults being amongst the highest of the nations surveyed (the United States was not included in the survey). Canadian men had the largest waistline measurements of all nations measured, indicating an increased incidence of obesity (Balkau et al., 2007).

Obesity costs to the Canadian health care system are estimated at $1.6 billion, or 2.4 per cent of the total health care budget. In addition, there is another $2.7 billion in indirect costs associated with obesity, including lost productivity, disability insurance, reduced quality of life, mental health problems due to stigmatization, and poor self-esteem (Katzmarzyk & Janssen, 2004; Starky, 2005).

Our children and youth are not immune to this pandemic. The latest published data from the Health Behaviour in School-aged Children Study, which surveys young people between the ages of 10 to 16 years from 34 mostly European countries, indicated that Canadian youth were fourth in the sample in terms of obesity rates (4.1 per cent), after Malta, the United States, and England. In total, nearly 1 in 5 students (19.4 per cent) were obese or overweight according to the survey (Janssen et al., 2005). These rates do not bode well for the health of these students as they transition into adulthood.

The Canadian House of Commons Standing Committee on Health (2007) noted that obesity and overweight issues are affecting even higher numbers of children and youth, with over one-quarter of all children and youth being affected, particularly ages 6–11 (26 per cent) and ages 12–17 (29 per cent). For First Nations children, the numbers are much more startling (55 per cent living on-reserve and 44 per cent living off-reserve are overweight/obese). The Standing Committee on Health also noted expert predictions that "today's children may be the first generation for some time to have poorer outcomes and a shorter life expectancy than their parents" (p. 1).

Socio-economic status plays a significant role in determining levels of obesity. Those with lower socio-economic status tend to have higher levels of obesity, less participation in organized sports, and a lack of safe parks and playgrounds (Oliver & Hayes, 2005; Canadian Research Institute for Social Policy [CRISP], 2007). Research has shown that higher education levels and higher literacy and numeracy skills lead to better health, as people with these skills and education often make better use of available health information (e.g., activity guides, nutrition facts, web sources) (Rootman & Robson, 2003). Children living in neighbourhoods with higher socio-economic status were reported to have only 50 per cent of the risk of overweight or obesity compared to children living in disadvantaged neighbourhoods (Oliver & Hayes, 2005). Higher income families have the ability to purchase more fruits and vegetables and less fatty meats. Also, the presence of a park or natural setting within walking distance makes physical activity more possible.

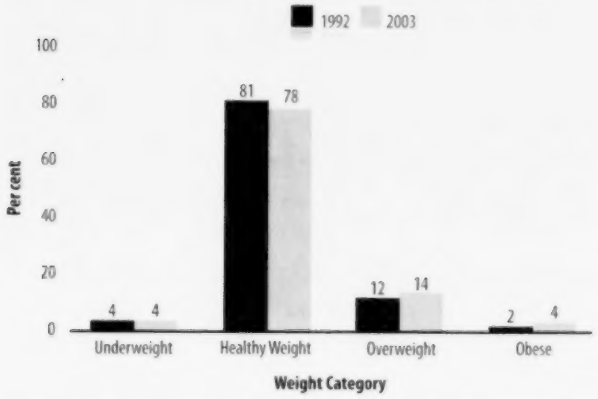
Young people who are overweight or obese are also much more likely to report having only poor or fair health; being discriminated against because of appearance; getting poorer marks in school (McCreary Centre Society, 2004a); and being bullied by others and becoming bullies themselves (Janssen, Craig, Boyce, & Pickett, 2004).

While overweight or obesity is related to many health risks, underweight is also problematic; it may be related to an underlying illness or an eating disorder and can cause osteoporosis and infertility (Health Canada, 2003; CIHI, 2006).

Satisfaction with body weight or perception of body image can be important motivators for eating and associated behaviours, especially among young people. In 2003, 50 per cent of youth between 12 and 19 years old were satisfied with their body image (AHS, 2003). In 2005, CCHS reported that 72 per cent of youth felt that their weight was just right. Youth in Kootenay Boundary HSDA were much more likely to think so (87 per cent) than other youth in the province (CCHS, 2005).

Figure 4.6

Body Mass Index Weight Categories, by Survey Year, 1992 and 2003 (School-aged Children - Grades 7 Through 12)



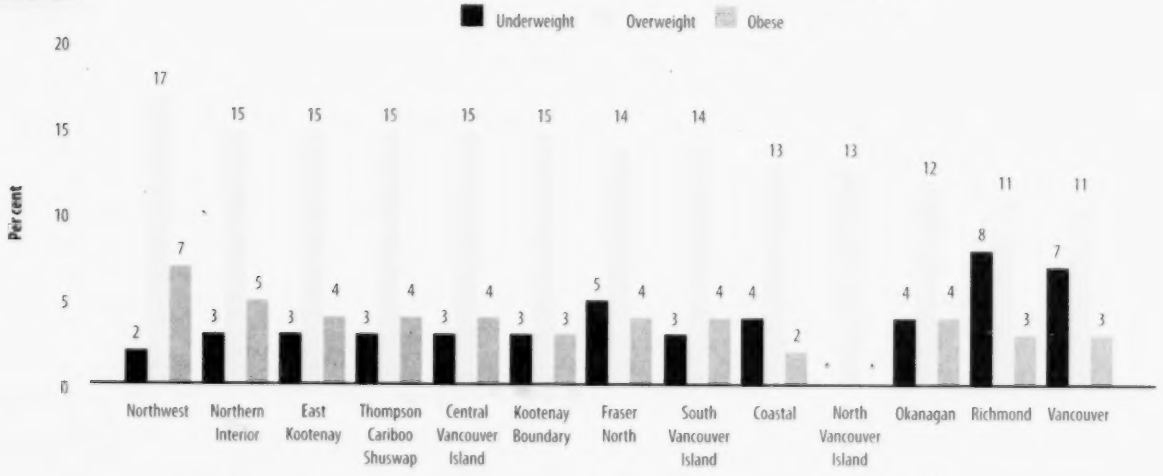
Source: McCreary Centre Society, 2006b.

The most common indicator used to assess healthy weight in an individual is Body Mass Index (BMI), which is a measurement of the relationship between weight and height. This relationship was set based on the association of BMI to health risks; however, this was based on the health risks for adults and has not been precisely defined for children. Therefore, when BMI is calculated for children and youth, age- and gender-specific norms are considered (McCreary Centre Society, 2006b; Cole, Belizzi, Fliegal, & Dietz, 2000). Caution is always required when using self-reported BMI as an indicator of weight status as there is a tendency for some respondents to underestimate weight and overestimate height (PHO, 2006). For example, self-reports by 12- to 17-year-olds in 2003 showed substantially lower levels of obesity/overweight compared with actual measurements in 2004 (Shields, 2006).

The 1992 and 2003 AHS collected information on the height and weight of student respondents. The percentage of students with healthy weights declined from 81 per cent in 1992 to 78 per cent in 2003, primarily because of an increase in overweight and obese (rather than underweight) students (Figure 4.6). Most of this change was related to male students; the percentage of overweight males increased from 15 to 18 per cent and obese males from 3 to 5 per cent. For male students, those 16 years and older were least likely to have healthy weights, while females 17 years and older were least likely to have healthy weights (McCreary Centre Society, 2006b). Geographically, Richmond and Vancouver HSDAs had the highest percentage of underweight students (8 per cent and 7 per cent respectively); Northwest HSDA had the highest percentage of overweight students (17 per cent) (Figure 4.7).

Figure 4.7

Body Mass Index Weight Categories, by HSDA, 2003 (Grades 7 Through 12)



*Underweight and obese data not available for the North Vancouver Island HSDA as the sample size was too small.
Note: Data was not available for Fraser East, Fraser South, and the Northeast HSDAs.

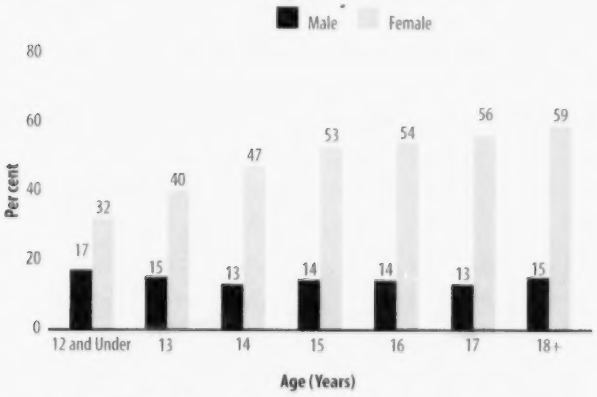
Source: McCreary Centre Society, 2006b.

Between 1992 and 2003, there was a significant increase in student respondents who indicated that they were trying to lose weight, from 35 per cent to 39 per cent. In 2003, 55 per cent of females and 22 per cent of males were trying to lose weight. Further, 32 per cent of students responded that they had dieted in the past year to try to lose weight; 49 per cent of female students and 14 per cent of male students had done so. While there was little variation in dieting behaviour by age among males, dieting among females increased with age; 32 per cent of females 12 years and under had dieted, compared with 59 per cent of those 18 years or older (Figure 4.8). What is particularly concerning is that well over 40 per cent of female students who were at a healthy weight or who were underweight dieted (McCreary Centre Society, 2004a; 2006b).

Good nutrition is important for healthy growth in young people and for health maintenance for older people. In the 2005 CCHS, nearly nine in every ten respondents 12 to 19 years old (89 per cent) felt that they or their families could always afford to eat balanced meals in the past year. Only 82 per cent, however, indicated that they always had enough of the kinds of food they wanted to eat; this was significantly lower than the percentages in older age groups (86 per cent in the 20–64 age group, and 91 per cent in the 65 and over age group). The lower percentage may be related to the fact that parents are making food choices for younger children.

Figure 4.8

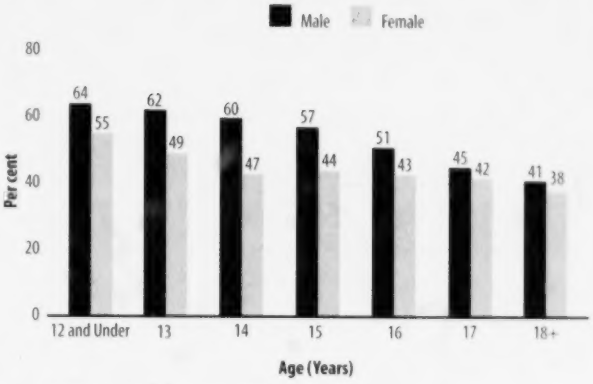
Dieted in the Past Year, by Age, 2003 (Grades 7 Through 12)



Source: McCreary Centre Society, 2006b.

Figure 4.9

Always Eats Breakfast on School Days, by Age and Gender, 2003 (Grades 7 Through 12)



Source: McCreary Centre Society, 2006b.

Further, only 42 per cent of respondents age 12 to 19 indicated that they ate fruits and vegetables 5 or more times per day. Among HSDAs, Kootenay Boundary had a significantly higher percentage (66 per cent) and Northern Interior a significantly lower percentage (26 per cent) of youth eating fruits and vegetables 5 or more times per day.

Another area of concern is the number of students who practice binge eating, gorging, or vomiting on purpose after eating, although the percentage doing one or more of these practices has dropped from 36 per cent in 1992 to 30 per cent in 2003. In 2003, female students were more than twice as likely as males to have binged or gorged (37 per cent versus 18 per cent) or vomited on purpose after eating (7 per cent versus 3 per cent).

A further concern is that only 50 per cent of all student respondents in 2003 indicated that they always ate breakfast on school days, arguably the most important meal for students (CRISP, 2006b). While female students were significantly less likely than male students to always have breakfast, eating breakfast declined consistently with age for both genders (Figure 4.9).

Social and Emotional Well-Being

Adolescence is an important time for development, but it can also be a time of great angst and worry that can affect one's health and overall outlook on life and create stress. A recent study suggested that Canada's teens have busier lives when compared to nine other nations, putting in long hours during the week doing school, homework, paid work, and housework. In fact, 39 per cent of teens felt that there was constant pressure to do more than could be handled (nearly 50 per cent for older teen girls), and 64 per cent had cut back on sleep to gain more time (Marshall, 2007).

Adolescent Anxiety

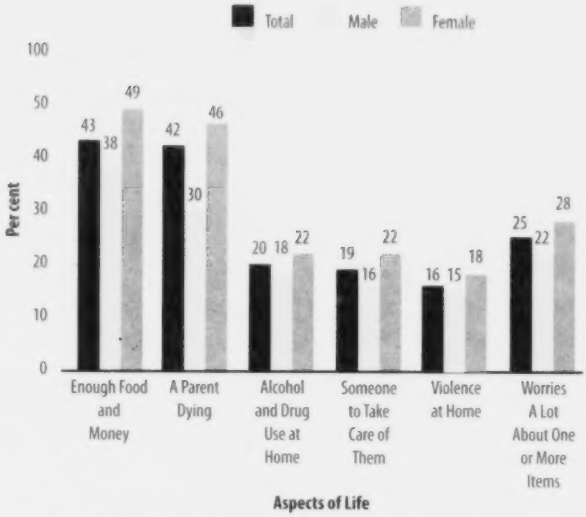
One-quarter of BC adolescents worried a lot or somewhat about one or more things in 2003. Key concerns included: families having enough to eat or enough money (43 per cent); a parent dying (42 per cent); alcohol or drug use at home (20 per cent); having someone to take care of them (19 per cent); and violence in the home (16 per cent). For all of these issues, female student respondents were significantly more likely to worry than male students (Figure 4.10). Geographically, students in the Vancouver HSDA were significantly more likely to worry about three of these factors (enough food/money, someone to care for them, violence in the home); students in Richmond HSDA were more likely to worry about two of them (enough food/money, someone to care for them); and students in the more rural Northern Interior, Kootenay Boundary, and Thompson Cariboo Shuswap HSDAs were significantly more likely to be worried about a parent dying.

Mental Disorders

The Canadian Paediatric Society (2007) has suggested that "mental health problems threaten to become the next paediatric epidemic" (p. 2). It has been estimated that, at any given time in BC, about 100,000 children, or 14.3 per cent of those between the ages of 4 and 17 years, experience significant clinical mental disorders (Waddell et al., 2007; Waddell, Shepherd, & Barker, 2007). The most common of these are anxiety disorders (Table 4.1). Such disorders interfere with child and youth development, and if untreated,

Figure 4.10

Worry Somewhat or A Lot About Aspects of Their Lives, 2003 (Grades 7 Through 12)



Source: McCreary Centre Society, Adolescent Health Survey, 2003 (custom run).

may persist into later years. In children, these disorders may result in the child's refusal to go to school, withdrawal from peers, poor coping with everyday stresses, angry outbursts, and a reduction in grades, among other things (CRISP, 2006a). Most young people with these disorders can lead healthy lives if they receive appropriate treatment in a timely manner.

While adolescence should be a time of maximum health, emotional challenges often interfere. For example, between 1992 and 2003 (McCreary Centre Society, AHS, custom run), there was a small but significant increase in the percentage of students being bothered by "nervousness". In 2003, Grade 12 students were more likely to be bothered by nervousness than those in Grade 7 (5 per cent versus 2 per cent). Females were nearly twice as likely as males (5 per cent versus 3 per cent) to be extremely bothered by nervousness. At the same time, students reported significant increases in feeling seriously distressed (Figure 4.11) and the level of distress increased with grade level. Female respondents were nearly twice as likely to report being seriously distressed than male respondents, a trend consistent with Canada-wide studies (CAARRN, 2004b).

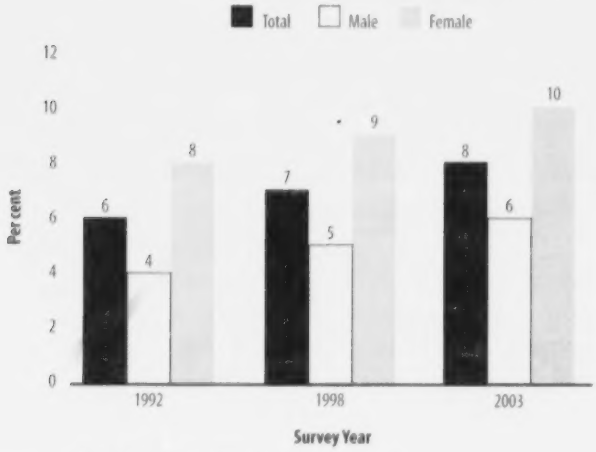
Table 4.1 **Prevalence of Children's Mental Disorders and Population Affected in British Columbia, 2002**

Disorder	Estimated Prevalence (%)	Age Range (Years)	Estimated Population	Estimated Population Affected
Any Anxiety Disorder	6.4	5–17	650,700	41,600
Attention-Deficit/Hyperactivity Disorder	4.8	4–17	692,100	33,200
Conduct Disorder	4.2	4–17	692,100	29,100
Any Depressive Disorder	3.5	5–17	650,700	22,800
Substance Abuse	0.8	9–17	474,000	3,800
Pervasive Developmental Disorders	0.3	5–15	538,300	1,600
Obsessive-Compulsive Disorder	0.2	5–15	538,300	1,100
Any Eating Disorder	0.1	5–15	538,300	500
Tourette's Syndrome	0.1	5–15	538,300	500
Schizophrenia	0.1	9–13	252,900	300
Bipolar Disorder	0.1	9–13	252,900	<300
Any Disorder	**14.3**	**4–17**	**692,100**	**99,000**

Notes:

- For references to original studies and for methods used to pool prevalence rates, see Waddell, Offord, Shepherd, Hua, & McEwan, 2002.
- Population estimates for children in each age range drawn from BCSTATS, 2006, PEOPLE 32.
- Estimated Population Affected is determined by estimated prevalence multiplied by estimated population.

Figure 4.11 **Students Who Were Seriously Distressed, by Gender, 1992, 1998, and 2003 (Grades 7 Through 12)**



Source: McCreary Centre Society, Adolescent Health Survey, 1992, 1998, and 2003 (custom run).

Social Supports

Having strong supports in place is important not only for young people, but for everyone. It is a basic "determinant of health" and is an asset in dealing with troubled times. According to the 2005 CCHS, just over one-half (51 per cent) of youth respondents had an index indicating strong social supports, based on responses to such questions as having someone to have a good time with, relax with, or do enjoyable things with. The index was based on a score ranging from 0 to 16, and those scoring 15 to 16 had strong positive social interactions. Females had a higher level of support than males (54 per cent versus 47 per cent).

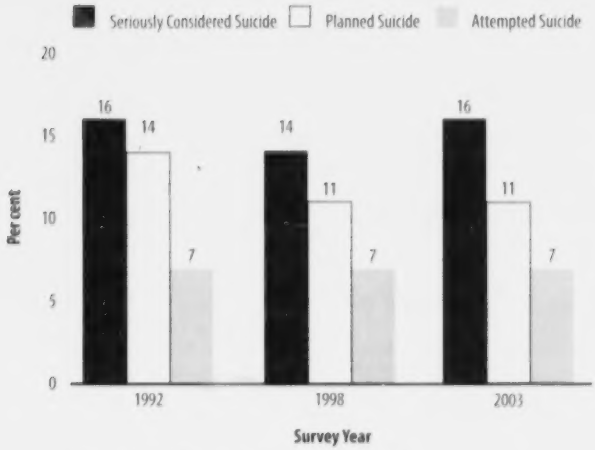
A second index looked at emotional support, and was based on responses to questions such as having someone to listen, to receive advice about a crisis, to share private fears and worries with, and to turn to for suggestions on personal problems. The index was based on a score of 0 to 32, and those with scores of 29 to 32 were viewed as having a strong

emotional support index. Only 47 per cent of youth 12 to 19 years of age had strong emotional supports in place, although females were significantly more likely than males to have strong supports (52 per cent versus 43 per cent). The survey also asked about a sense of belonging to the local community, and 71 per cent indicated that they had a very strong or somewhat strong connection to their community.

Suicide

One of the major mental health issues faced by adolescents is that of suicidal ideation, which is related to distress and depression and many other health problems. While there was a drop between 1992 and 1998 in those who reported ever having seriously considered suicide (16 per cent versus 14 per cent), by 2003 that percentage had risen back to the 1992 level. In 2003, more than one-fifth (21 per cent) of females had seriously considered suicide. While the percentage of those actually planning suicide was lower, those attempting suicide remained at a high level of 7 per cent over the 3 survey years (Figure 4.12). Of all students attempting suicide in 2003, 22 per cent received an injury requiring medical treatment as a result of the attempt, down from 28 per cent in 1992.

Figure 4.12 **Thoughts of Suicide and Attempts Among BC Youth, 1992, 1998, and 2003 (Grades 7 Through 12)**



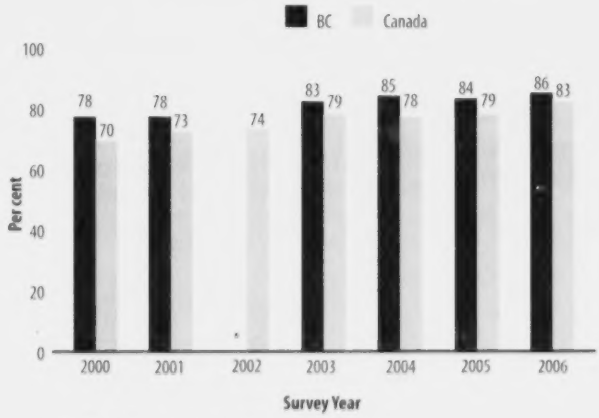
Source: McCreary Centre Society, Adolescent Health Survey, 1992, 1998, and 2003 (custom run).

In summary, many teens suffer from anxieties and worries, and feel stressed, and there are distressingly high numbers of teens contemplating and attempting suicide. Females are significantly more likely than males to suffer from many of these issues, especially as they get older, although females also indicate that they have higher levels of supports in place than males. Overall, however, youth report a relatively low level of social and emotional supports.

Substance Use

As part of adolescent experimentation, most adolescents will engage in some type of risky health behaviour that involves substances (e.g., tobacco, alcohol, hashish/marijuana, etc.); either underage use of legal substances, or use of illegal substances.

Figure 4.13 **Percentage of Youth That Never Smoked, BC and Canada, 2000 - 2006 (Age 15 to 19 Years)**

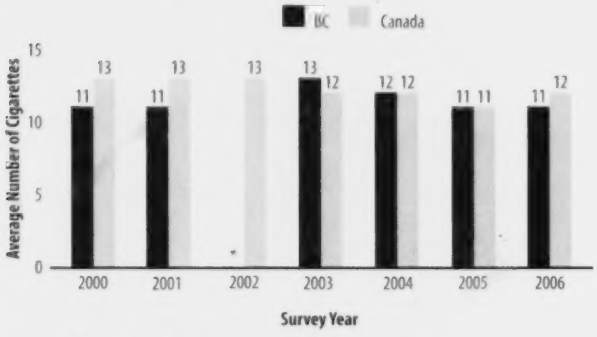


*The BC sample size was too small to report in 2002.
Source: Canadian Tobacco Use Monitoring Survey (CTUMS), 2000-2006.

Tobacco and Smoke-Free Environments

Tobacco is the greatest preventable cause of death and illness in Canada and BC (Bridge & Turpin, 2004). The latest estimates from the British Columbia Vital Statistics Agency show that nearly 6,000 deaths annually in BC were attributable to the direct and indirect effects of smoking (British Columbia Vital Statistics Agency, 2006). Mortality is related to a variety of diagnoses, including circulatory system diseases, cancers, and respiratory diseases. Not only are smokers at greater

Figure 4.14 **Average Cigarettes Smoked Per Day, BC and Canada, 2000 - 2006 (Age 15 to 19 Years)**



*The BC sample size was too small to report in 2002.
Source: Canadian Tobacco Use Monitoring Survey (CTUMS), 2000-2006.

risk of death and morbidity, but so are non-smokers who inhale mainstream or sidestream smoke from smokers. Children are particularly vulnerable because their bodies are still developing. As relatively few individuals take up tobacco smoking after the age of 19 years, it is important to prevent young people from initiating smoking in the first place, to ensure there are tobacco-free environments in order to deal with second-hand smoke issues, and to model healthy behaviours.

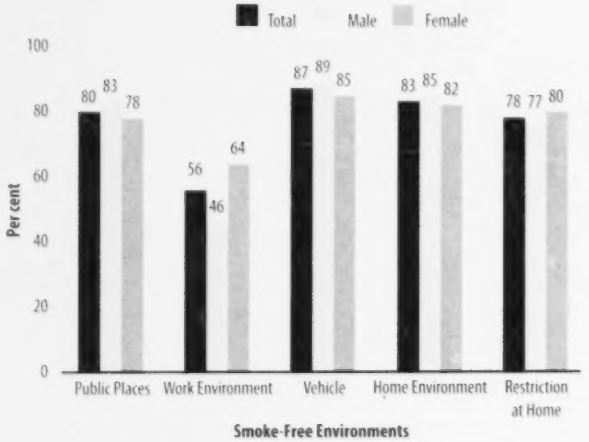
Between 1998 and 2003, students who had never smoked increased significantly, from 55 per cent to 73 per cent; in 2003, males were significantly more likely than females to have *never* smoked (76 per cent versus 71 per cent) (McCreary Centre Society, 2004a). Using a more limited age range, the Canadian Tobacco Use Monitoring Survey (CTUMS) showed that between 2000 and 2006 in BC, for youth aged 15 to 19 years, those who had never smoked had increased from 78 per cent to 86 per cent (Figure 4.13). Those who were current smokers had fallen from 20 per cent to 12 per cent between 2000 and 2006. For those who did smoke, the number of cigarettes smoked fell marginally, after peaking in 2003 (Figure 4.14).

When all teens were considered in the province in 2005, approximately 90 per cent were currently non-smokers. This relatively low rate for smoking among teens was not equally shared throughout the province. Some HSDAs, such as Thompson Cariboo Shuswap and North Vancouver Island, had significantly lower non-smoking rates (less than 82 per cent), while other HSDAs, such as South Vancouver Island and Northwest, had significantly higher non-smoking rates (more than 94 per cent) than other regions.

Young people who are exposed to environments where smoking occurs can be doubly jeopardized. Not only might they suffer the health effects of second-hand smoke, but they are also subjected to poor role-modeling behaviour at a time when they might be influenced to take up experimental smoking. In the month prior to the 2005 CCHS, nearly 80 per cent of youth surveyed frequented mostly smoke-free public places; 56 per cent of youth who worked did so in a completely restricted, smoke-free work environment; 87 per cent were mainly not exposed to second-hand smoke in a vehicle; 83 per cent lived in a home that was largely smoke free; and 78 per cent lived in homes that had smoking restrictions.[1] There were differences between genders, but the differences were only significant in the work environment, as males were significantly less likely to work in a smoke-free work environment than females (Figure 4.15).

School environments also varied substantially in terms of policies restricting smoking. Based on a review commissioned by the Ministry of Health in 2005, all school districts had some

Figure 4.15 **Smoke-Free Environments in BC, 2005 (Males and Females, Age 12-19)**



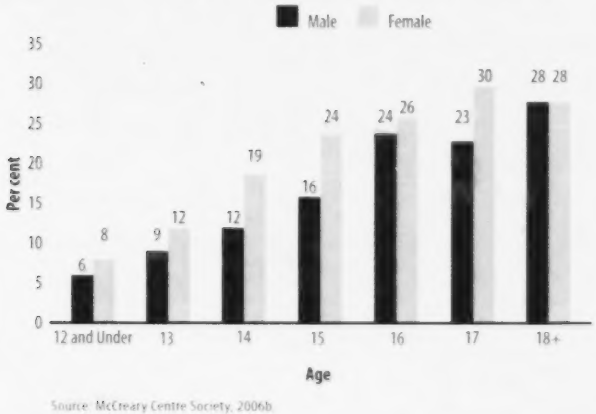
Source: Canadian Community Health Survey, Share File Cycle 3.1.

[1] *In BC, young people generally are less likely to frequent smoke-free environments than older age groups, except for living in a residence that has smoking restrictions (Foster & Keller, 2007).*

type of smoking restriction policies. Policies were identified in seven dimensions or areas: in buildings; on grounds; district vehicles; other locations (e.g., vehicles parked on school grounds, all district functions, sporting events); community use of school property; transportation; and enforcement. No school district had policies in place for all dimensions; only 7 had policies for 6 dimensions, and 15 had policies for 5 dimensions. At the other extreme, 9 school districts had covered 2 or less of the dimensions in their smoking restriction policies (McBride, 2005). This changed effective September 2007, when all schools and school grounds became smoke free; this event will be discussed later in this report.

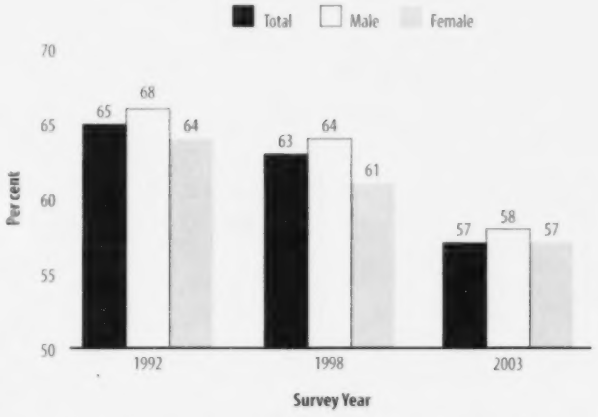
While some of these survey results differ—largely due to the use of slightly different question wording, settings where questions were asked, and age groups—generally, each survey leads to a strong conclusion that more young people are not initiating smoking, and those that do smoke have cut back somewhat on the number of cigarettes smoked. Nevertheless, even though the number of current smokers may have fallen, there are still large numbers of experimental smokers, especially among females and older teens (McCreary Centre Society, 2006b), and the rates for experimental smokers have consistently increased with age (Figure 4.16). Furthermore, it seems that young people are more often exposed to second-hand smoke than older age groups.

Figure 4.16 Experimental Smoking Status, by Age and Gender, 2003 (Grades 7 Through 12)



Source: McCreary Centre Society, 2006b

Figure 4.17 Ever Used Alcohol, 1992, 1998, and 2003 (Grades 7 Through12)



Source: McCreary Centre Society, Adolescent Health Survey, 1992, 1998, and 2003

Alcohol

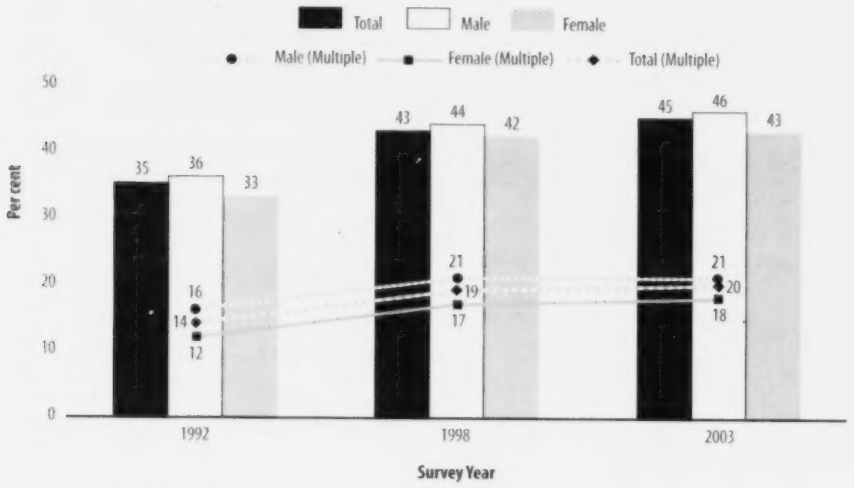
The legal age for consuming alcohol in BC is 19 years, but that has not stopped students and young people from drinking as part of their experimenting behaviour through the teen years. Nevertheless, alcohol consumption can be very destructive for young people and can result in lifelong challenges related to excessive and inappropriate drinking behaviours.

Between 1992 and 2003, the percentage of students in Grades 7 to 12 who had ever used alcohol significantly decreased, from 65 per cent to 57 per cent of students (Figure 4.17). The biggest reduction in those who had ever tried alcohol was for students under the age of 15 (49 per cent in 1992 versus 37 per cent in 2003), although all age groups saw a reduction.

While the trend for those students ever having tried alcohol was down, for those who ever drank alcohol during the past month, binge drinking (having five or more drinks in a row) was up, from 35 per cent in 1992 to 45 per cent in 2003. Geographically in 2003, the province was divided into two groups with respect to binge drinking. The students in the Lower Mainland HSDAs of Richmond, Vancouver, and Fraser North were significantly less likely to binge drink than the provincial average, while students in all other HSDAs for which data were available were more likely to binge drink than the provincial average. Not only was binge drinking more

Figure 4.18

Binge Drinking in the Last Month
1992, 1998, and 2003 (Grades 7 Through 12)



Note: Binge drinking is defined as 5 or more alcohol drinks in a short time.
"Multiple" indicates respondents binge drinking on 3 or more occasions in the past month.
Source: McCreary Centre Society, Adolescent Health Survey, 1992, 1998, and 2003.

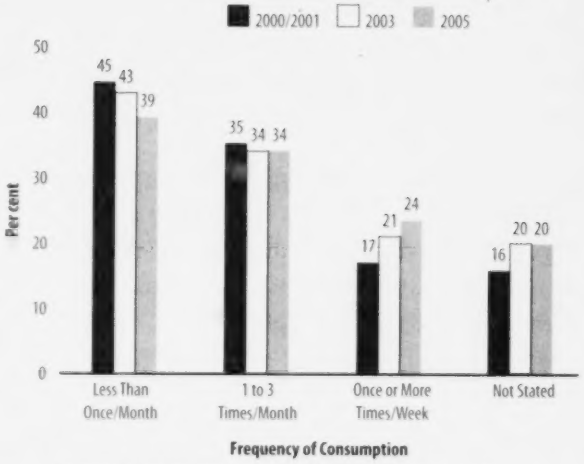
prevalent, but the percentage of students binge drinking on three or more occasions in the month before the survey also increased between 1992 and 2003 (Figure 4.18).

Results from the CCHS also showed that of the 48 per cent of those who drank alcohol in the last year, the frequency of drinking had increased over time. Those drinking less than once a month had dropped from 45 per cent in 2000/2001 to 39 per cent in 2005, while those drinking once a week or more had increased from 17 per cent to 24 per cent in the same period (Figure 4.19).

While the Safe Schools and Social Responsibility Survey (SSSRS) had very limited geographical coverage in the province, results showed that alcohol consumption (being under the influence of alcohol and binge drinking) occurred mainly in the community, but also occurred at school and at school events. Males were much more likely than females to drink (13 per cent versus 8 per cent), be under the influence of alcohol (11 per cent versus 8 per cent), or binge drink (7 per cent versus 3 per cent) while at school or at school events, but there was little gender difference related to alcohol behaviour in the community (Table 4.2).

Figure 4.19

Frequency of Alcohol Consumption,
2000/2001, 2003, and 2005 (Age 12 to 19 Years)



Source: Canadian Community Health Survey, Share File Cycles 1.1, 2.1, and 3.1.

Table 4.2 Alcohol Behaviour by Location, 2006

	At School			At a School Event			Outside School		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Consumed Alcohol	13%	8%	11%	17%	15%	17%	61%	61%	61%
Under the Influence	11%	8%	9%	15%	14%	15%	40%	42%	41%
5+ Drinks at One Time	7%	3%	5%	10%	7%	8%	35%	32%	34%

Source: Safe Schools and Social Responsibility Survey, 2006.

While there are some encouraging signs, there are also troubling trends in the data, as it appears that youth who drink are doing so more frequently, and many of those who drink do so to get drunk.

Marijuana

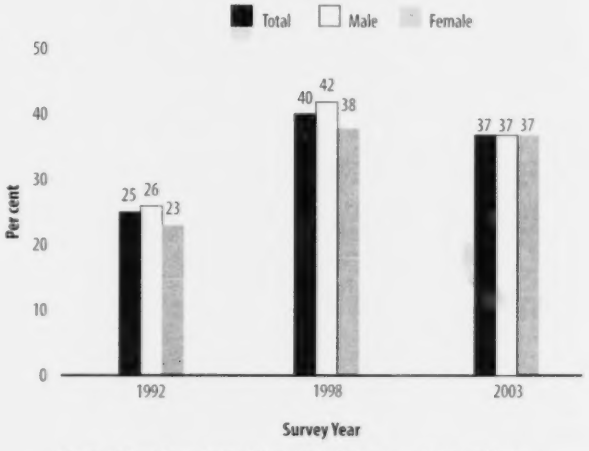
The use of marijuana in Canada, and particularly in BC, is reasonably widespread; in fact, Canada was recently reported to have the highest percentage of the population who were users (Dube, 2007). Studies in both the United States and Canada have shown that regular marijuana use can cause respiratory problems, may interfere with memory, and may affect the ability to learn and maintain academic performance and increase the risk of injury and possibly mental illness. (McCreary Centre Society, n.d., Marijuana use).

Among BC students, marijuana is, after alcohol, the current "drug of choice". Those students who had ever used marijuana increased significantly between 1992 (25 per cent) and 1998 (40 per cent), and then decreased slightly to 37 per cent in 2003 (Figure 4.20). Data from the 2003 CCHS indicated a similar figure (36 per cent) for youth who had used marijuana less than once a month.

The 37 per cent of users identified in 2003 were comprised of 16 per cent experimental users (at least once but not in the last month), 8 per cent infrequent users (less than three days), 5 per cent frequent users (three to nine days), and 7 per cent heavy users (ten or more days a month). The 2003 CCHS showed that 6 per cent used more than once a week.

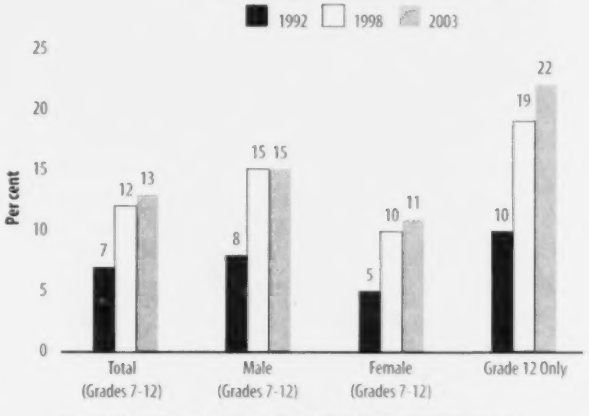
Nearly one-third of those 17 years or older were current users, compared with 10 per cent who were 14 years or younger. There were 13 per cent of students who used on three or

Figure 4.20 Ever Used Marijuana, 1992, 1998, and 2003 (Grades 7 Through 12)



Source: McCreary Centre Society, Adolescent Health Survey, 1992, 1998, and 2003.

Figure 4.21 Used Marijuana 3+ Times in the Last Month, 1992, 1998, and 2003 (Grades 7 Through 12)



Source: McCreary Centre Society, Adolescent Health Survey, 1992, 1998, and 2003.

more days in the last month, which was significantly higher than the 7 per cent who did so in 1992; use was particularly high in the higher grades (Figure 4.21).

Geographically, half of all students in the North Vancouver Island, Kootenay Boundary and East Kootenay HSDAs had used marijuana in the past year; this was twice the rate for students in the urban southwest HSDAs of Vancouver, Richmond, and Fraser North. These differences were significant for both male and female students.

The most recent data on use by secondary students comes from the 2006 SSSRS. This survey reported that 9 per cent (11 per cent males and 9 per cent females) used marijuana every week or more. Further, 5 per cent (7 per cent males and 4 per cent females) of secondary students also indicated that they used marijuana every week or more at school.

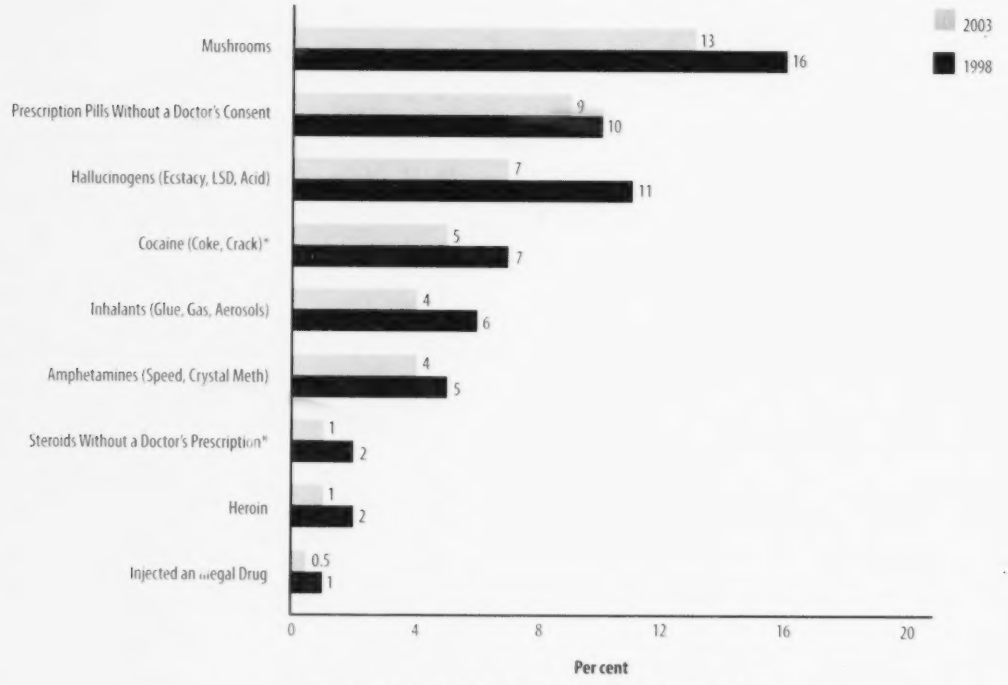
Other Drugs

As with the adult population, there is a variety of other so-called "recreational" or "hard" drugs that find their way illicitly into the hands of young people. These drugs include cocaine (in several forms), hallucinogens (ecstasy, LSD, acid), inhalants (glue, gas, aerosols), amphetamines (speed, crystal meth), heroin, steroids, and prescription pills without a doctor's consent or prescription. The use of these drugs can have major health and social consequences to teens that may continue into their adult life.

In BC, many of these so-called "hard" drugs have been tried by some students. In the 2003 AHS, when students were asked whether they had ever used a list of drugs (other than tobacco, alcohol, or marijuana), 23 per cent of respondents indicated that they had used one or more of the drugs during their life, significantly less than the 29 per cent of respondents in 1998.

Figure 4.22

Ever Used Any of The Following Drugs , 1998 and 2003 (All Genders)



*Statistically significant difference between males and females at the 99 per cent confidence interval.
Source: McCreary Centre Society, Adolescent Health Survey, 1998 and 2003.

Use of all of these drugs decreased from 1998 to 2003 (Figure 4.22). Generally, the proportion of students who had ever tried illegal drugs increased significantly with age. For example, in 2003, 14 per cent of those who had tried illegal drugs were 14 years or younger, compared to 33 per cent in the 17 and older age group.

In terms of drug use, there was little difference between genders, except males were significantly more likely to use mushrooms for the purposes of getting high (14 per cent versus 12 per cent) and use steroids without a doctor's prescription (1.5 per cent versus 1 per cent). On the other hand, female students were significantly more likely to use prescription pills without a doctor's consent (11 per cent versus 7 per cent). Geographically, and relative to the provincial average, several HSDAs had significantly higher use of certain drugs in 2003: more than 6 per cent of students in Northern Interior and Okanagan HSDAs had tried amphetamines; more than 7 per cent of students in East Kootenay and Okanagan HSDAs had tried cocaine; and more than 9 per cent of students in Kootenay Boundary, Okanagan, and South Vancouver Island HSDAs had tried hallucinogens.

The SSSRS provides supporting information on the use of illegal drugs, although the survey asked different questions than the AHS. Rates of student use of cocaine, hallucinogens, inhalants, and prescription pills in the community were all similar to those found in the 2003 AHS, but a greater proportion of students had tried heroin (3 per cent versus 1 per cent); separate questions in the SSSRS showed the use of crystal meth (4 per cent) and ecstasy (8 per cent).

While drug use is more common by students in community settings, a small percentage of students also used drugs at school and at school functions (Table 4.3). For example, between 3 and 5 per cent of students responded that they had used a particular drug while at school, and a similar percentage had done so while at school functions. When marijuana was added to the list, 9 per cent of students responded that they had been "high" at school once or a few times, while 5 per cent indicated they were high every week or more because of drug use.

Consequences of Alcohol or Drug Use

Consequences of alcohol or drug use range from relationship issues with family and friends as well as getting into fights and trouble with various groups. The responses to the SSSRS showed that for the 60 per cent of students who indicated that they used alcohol or drugs, the major consequences one or more times per week involved trouble at home, followed by poor school marks, fought with someone, problems with boyfriend/girlfriend, lost interest in usual activities, trouble with police, trouble at school, and lost friends (Table 4.4).

Table 4.3

Hard Drug Use at School and School Functions, 2006

	At School			At School Function		
	Once or a Few Times	Every Week or More	Total	Once or a Few Times	Every Week or More	Total
Ecstasy	2%	2%	4%	2%	2%	4%
Hallucinogens (LSD, Acid)	1%	2%	3%	1%	2%	3%
Inhalants (Glue, Gas, Aerosols)	2%	2%	4%	1%	2%	3%
Prescription Pills (Non-Prescribed)	3%	2%	5%	2%	2%	4%
Crystal Meth	1%	2%	3%	1%	2%	3%
Cocaine	1%	2%	3%	1%	2%	3%
Heroin	1%	2%	3%	1%	2%	3%
High Because of Use *	9%	5%	14%	7%	4%	11%

* Includes marijuana use.

Source: Safe Schools and Social Responsibility Survey, 2006.

Males were generally more likely than females to suffer consequences, especially trouble at school (29 per cent versus 17 per cent), poor marks (39 per cent versus 33 per cent), and trouble with police (25 per cent versus 16 per cent). Female students were more likely than males to have problems with their boyfriend/girlfriend (28 per cent versus 23 per cent).

The AHS canvassed a larger number of consequences and used slightly different questions. Key consequences of alcohol or drug use were: passed out, argued with family members, had poor school work or marks, damaged physical property, got into a physical fight, got in trouble with the police, or got injured (Figure 4.23). As with the SSSRS, the AHS showed gender differences, with females being significantly more likely to have passed out, got poor marks, lost friends,

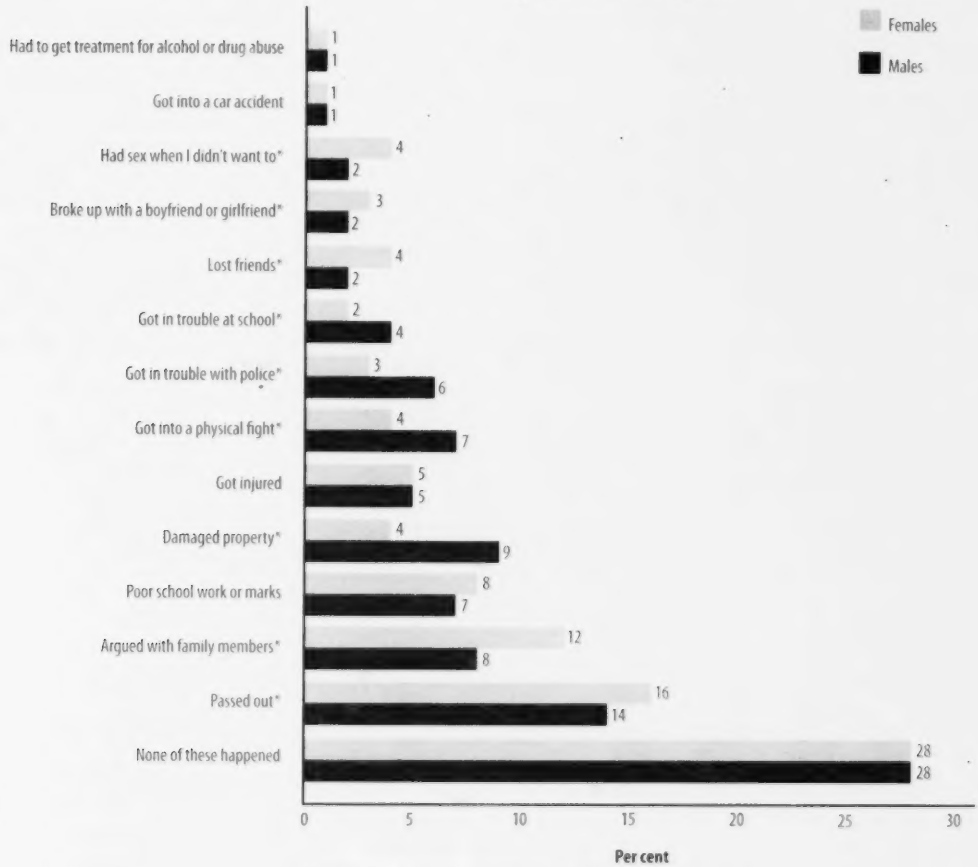
Table 4.4 **Consequences of Drug or Alcohol Use, 2006**

	Never	Once or a Few Times	One or More Times Per Week
Trouble at Home	54%	39%	7%
Poor Marks	64%	30%	6%
Had Fight	67%	28%	4%
Boyfriend/Girlfriend Problem	72%	21%	4%
Lost Interest in Usual Activities	74%	22%	4%
Trouble with Police	81%	16%	3%
Trouble at School	77%	20%	3%
Lost Friends	79%	19%	2%

Source: Safe Schools and Social Responsibility Survey, 2006.

Figure 4.23

Consequences of Alcohol or Drug Use, 2003 (Grades 7 Through 12)



*Statistically significant difference between males and females at the 99 per cent confidence interval.
Source: McCreary Centre Society, Adolescent Health Survey, 2003.

broke up with a boyfriend/girlfriend, argued with family, or been coerced into having sex. Males were more likely to have damaged property or had a physical fight, which often resulted in trouble at school and with police.

There are many similarities in the AHS and SSSRS data, particularly the data showing gender differences; both surveys showed that female students generally suffered consequences of relationships, and males were more likely to be involved in aggressive behaviour.

Sexual Health

The decisions made about sexual issues during the formative years of adolescence often establish future sexual behaviour; this can determine the risks related to sexually transmitted infections, including HIV/AIDS and unintended pregnancy (Boyce, Doherty, Fortin, & MacKinnon, 2003).

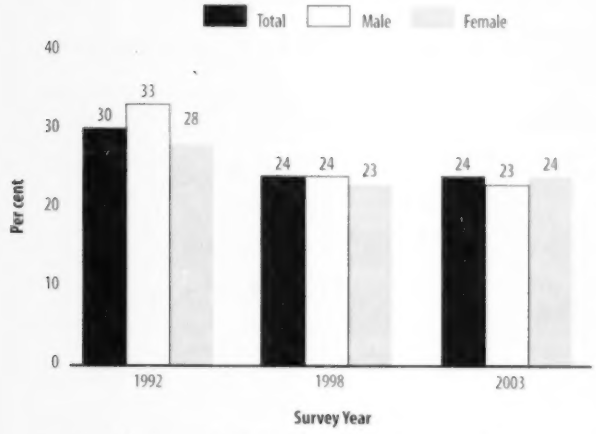
Sexual Activity

There was a significant reduction between 1992 and 2003 among BC students who reported having had sexual intercourse (Figure 4.24). In 1992, nearly one-third reported having had sexual intercourse (30 per cent), compared with less than one-quarter (24 per cent) in both 1998 and 2003. While males were more likely to report having had sex than females in 1992 (33 per cent versus 28 per cent), by 2003 the rates were comparable among males (23 per cent) and females (24 per cent).

The probability of having sex increased substantially with age. For example, in 2003, 7 per cent of 13-year-old respondents, 21 per cent of 15-year-olds, and 43 per cent of 17-year-olds had had sex. Sexual debut prior to age 15, however, fell between 1992 and 2003, and for females it dropped from 29 per cent to 16 per cent between 1992 and 2003 (Tonkin & Murphy, 2005). Those who looked older than their peers were significantly more likely to engage in sexual intercourse.

In 2003, students in the Vancouver, Richmond, and Fraser North HSDAs were significantly less likely to report having had sex (all less than 20 per cent) than other regions in the province, while 30 per cent or more of respondents in North Vancouver Island, East Kootenay, and Northern Interior HSDAs reported having had sex (Figure 4.25).

Figure 4.24 **Students Who Have Had Sexual Intercourse, 1992, 1998, and 2003 (Grades 7 Through 12)**



Source: McCreary Centre Society, Adolescent Health Survey, 1992, 1998, and 2003.

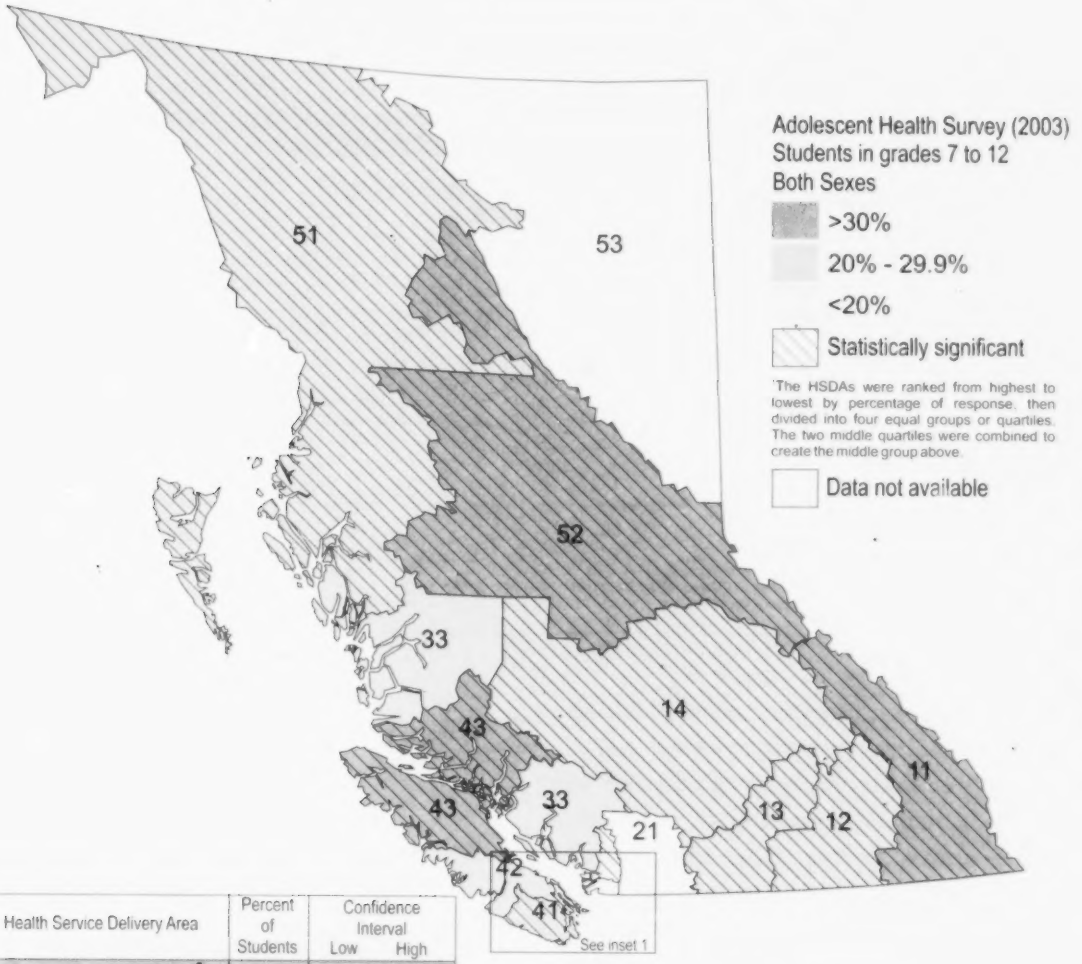
Birth Control

Between 1998 and 2003, for those who engaged in sexual intercourse, there was a significant reduction in the percentage who reported using no method of birth control the last time they had sex. Condom use and birth control pills were the most common methods of birth control (Figure 4.26). In 2003, 67 per cent of males and 61 per cent of females reported having used a condom. However, in 2003, a relatively high percentage (16 per cent) used the risky withdrawal method, and there was a large percentage (22 per cent) of Grade 7 students who did not use any birth control method the last time they had sex. Both of these types of behaviour can lead to unwanted pregnancies and to sexually transmitted infections.

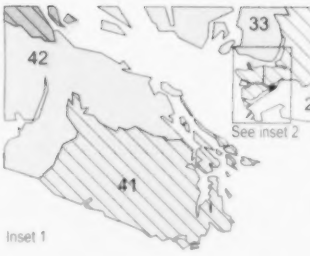
One important policy change during this period has been the availability of emergency contraception by request through pharmacists, rather than requiring a physician's prescription. Since this change in December 2000, access to emergency contraception has more than doubled overall among youth, and the largest impact has been in rural regions and on weekends and holidays (Soon, 2007). In the first two years following the policy change, there was a 51.9 per cent and 54.9 per cent increase in the use of emergency contraception by those aged 10 to 14, and 15 to 19, respectively (Soon, Levine, Osmond, Ensom, & Fielding, 2005).

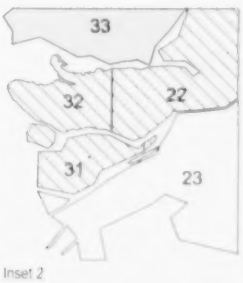
Figure 4.25

Distribution of Students Who Have Had Sexual Intercourse, 2003



Health Service Delivery Area	Percent of Students	Confidence Interval Low	High
43 North Vancouver Island	33.80	30.88	36.72 +
11 East Kootenay	32.70	30.34	35.05 +
52 Northern Interior	30.94	28.43	33.45 +
12 Kootenay Boundary	29.10	26.84	31.35 +
14 Thompson Cariboo Shuswap	28.86	26.60	31.11 +
51 Northwest	27.50	24.70	30.31 +
13 Okanagan	27.01	25.08	28.93 +
41 South Vancouver Island	26.60	24.42	28.77 +
42 Central Vancouver Island	25.56	23.66	27.46
33 North Shore/Coast Garibaldi	23.22	20.39	26.04
22 Fraser North	18.45	16.74	20.15 -
31 Richmond	16.42	13.46	19.38 -
32 Vancouver	14.56	12.80	16.32 -
21 Fraser East	N/A	N/A	N/A
23 Fraser South	N/A	N/A	N/A
53 Northeast	N/A	N/A	N/A
99 British Columbia	23.53	22.75	24.31

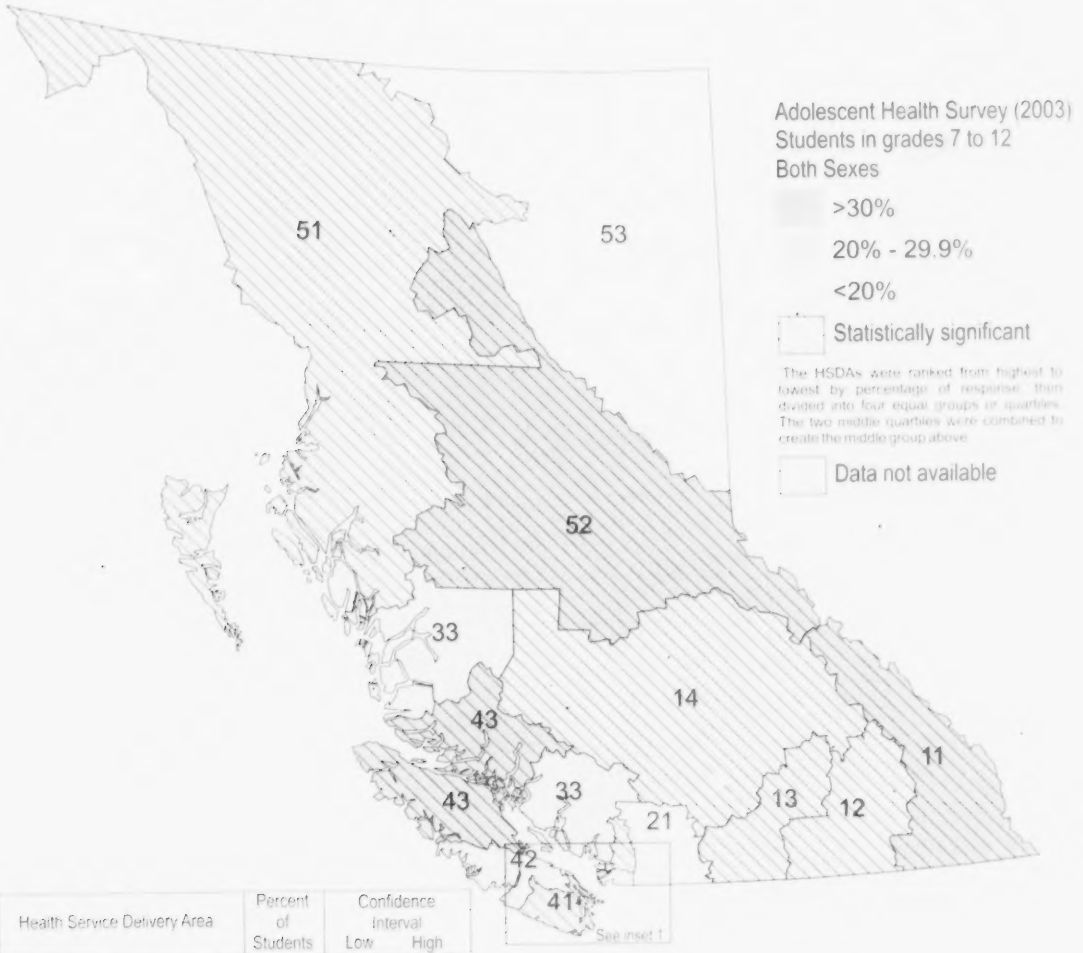




Confidence Interval (CI) is the term used when percentages are calculated based on a sample of the population. CIs estimate the margin of error and show the range within which the true percentage lies (listed in the table as low and high). These are 95% CIs, meaning that this sample, if repeated, would produce results in this range 95 out of 100 times.
+ indicates HSDA percentage is statistically significantly higher than the provincial rate.
- indicates HSDA percentage is statistically significantly lower than the provincial rate.
Map prepared with data from McCreary Centre Society, Adolescent Health Survey (2003).

Figure 4.25

Distribution of Students Who Have Had Sexual Intercourse, 2003



Health Service Delivery Area	Percent of Students	Confidence Interval Low	High
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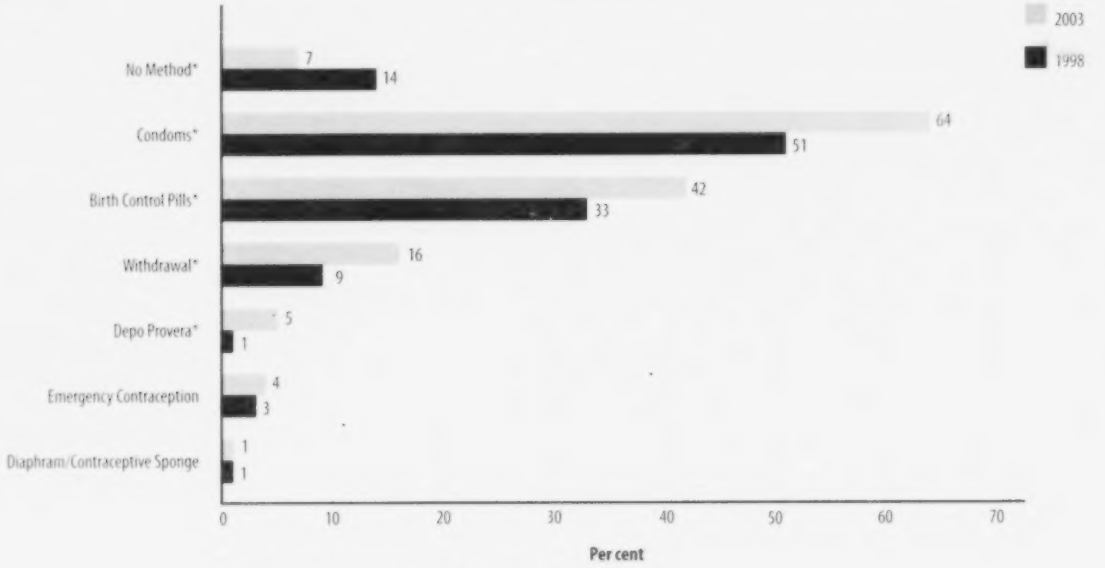
22 Fraser North	18.45	16.74	20.15 -
31 Richmond	16.42	13.46	19.38 -
32 Vancouver	14.56	12.80	16.32 -
21 Fraser East	N/A	N/A	N/A
23 Fraser South	N/A	N/A	N/A
53 Northeast	N/A	N/A	N/A
99 British Columbia	23.53	22.75	24.31

Confidence Interval (CI) is the term used when percentages are calculated based on a sample of the population. CIs estimate the margin of error and show the range within which the true percentage lies (listed in the table as low and high). These are 95% CIs, meaning that this sample, if repeated, would produce results in this range 95 out of 100 times.
+ indicates HSDA percentage is statistically significantly higher than the provincial rate.
- indicates HSDA percentage is statistically significantly lower than the provincial rate.
Map prepared with data from McCreary Centre Society, Adolescent Health Survey (2003).

Figure 4.26

Birth Control Practices in Youth, 1998 and 2003 (All Genders)



* Statistically significant difference between 1998 and 2003 at the 99 per cent confidence interval.
Source: McCreary Centre Society, Adolescent Health Survey, 1998 and 2003.

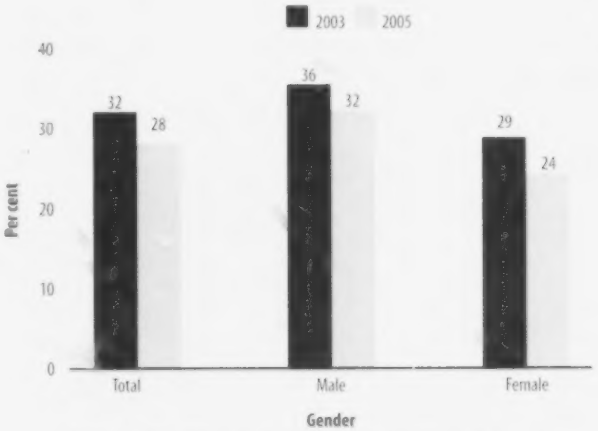
Further, improved access to emergency contraception does not appear to increase repeat use among adolescents. In BC, for example, of those users of emergency contraceptives who were aged 10 to 17 years, a little more than 10 per cent used this practice more than once in a year, and estimates suggest that between 100 to 200 additional unintended pregnancies in females 10 to 24 years were prevented because of the change in policy (Soon, 2007). Research also suggests that the availability of emergency contraception does not increase risk-taking behaviour or sexually transmitted infections (Leung, Soon, & Levine, 2007).

Multiple Sexual Partners

Between 2003 and 2005, the percentage of youth aged 15-19 who indicated they had multiple sexual partners in the last 12 months dropped for both sexes, although in both years, males were more likely to have multiple sexual partners than females (Figure 4.27).

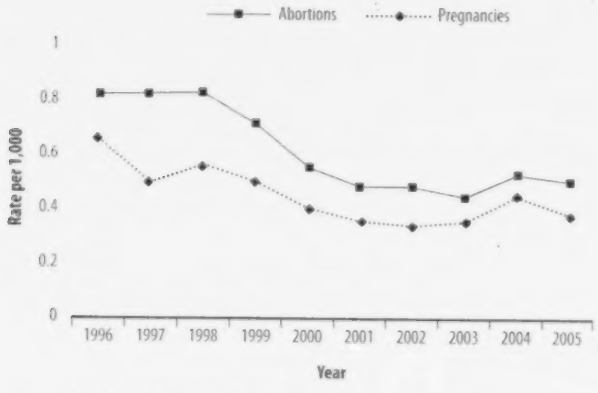
Figure 4.27

Multiple Sexual Partners, 2003 and 2005 (Age 15 to 19 Years)



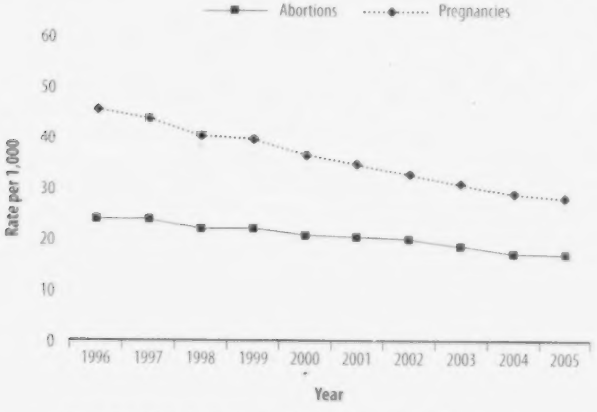
Source: Canadian Community Health Survey, Share File Cycles 2.1 and 3.1.

Figure 4.28 Teen Pregnancies and Abortions in BC, Age 10-14 Years, 1996 to 2005



Source: British Columbia Vital Statistics Agency, Ministry of Health, 2005.

Figure 4.29 Teen Pregnancies and Abortions in BC, Age 15-17 Years, 1996 to 2005



Source: British Columbia Vital Statistics Agency, Ministry of Health, 2005.

Teen Pregnancy

Most teenage pregnancies are unplanned and result in termination. Pregnancy rates increase with age in the teenage years. Between 1996 and 2005, however, there was a steady decline in the rates of both total teen pregnancies and total teen abortions for both female age groups of 10-14 and 15-17 (Figures 4.28 and 4.29). Possible reasons for this decline include increased use of contraception, later sexual debut, and an overall reduction in the number of students engaging in sexual intercourse.

Sexually Transmitted Infections

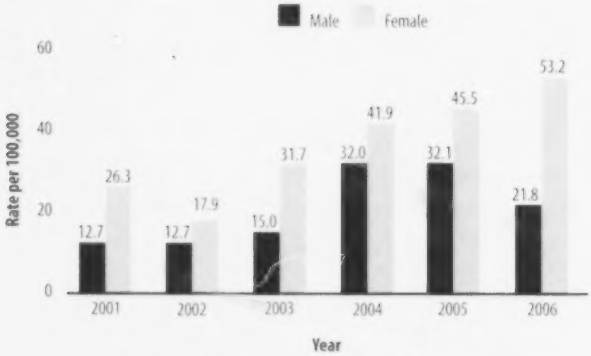
Despite the reduction in sexual activity among students and teens, and an increase in condom use, the rates of sexually transmitted infections remain problematic. Reported gonorrhea rates among 15- to 19-year-old youth showed a steady increase over the past few years, particularly for females, whose rates are consistently higher than those reported for males. Rates increased by approximately 50 per cent for females between 2001 and 2006. Male rates, while higher than in 2001, have fallen between 2005 and 2006 (Figure 4.30).

The rates for chlamydia increased for both males and females between 2001 and 2006; the rate for females in 2006 was close to 1,354 per 100,000, which was substantially higher than the rate for males (245.2/100,000) (Figure 4.31).

Rates for syphilis were much lower. Females had a higher rate than males (Figure 4.32), and it appears that the rates for males may be on the increase over time.

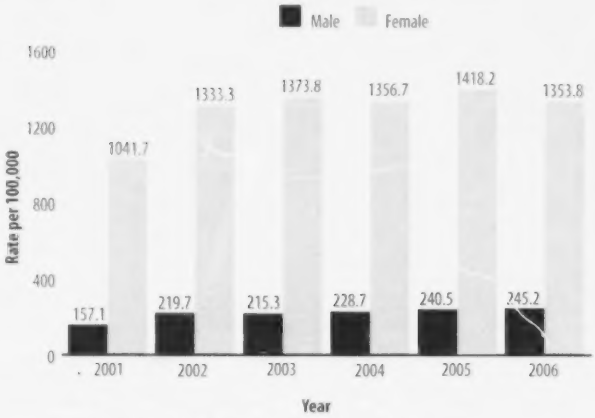
The incidence of HIV was greater for females up to 2005. The rates for males decreased significantly from 2001 to 2002; however, since 2002, male rates have steadily increased, and reached the 2001 level in 2006 (Figure 4.33). A recent national trend study has suggested that HIV rates among youth in BC are relatively high within Canada as a whole (Canadian Federation for Sexual Health, 2007).

Figure 4.30 Incidence of Gonorrhea, BC Youths, 2001 to 2006 (Age 15 to 19 Years)



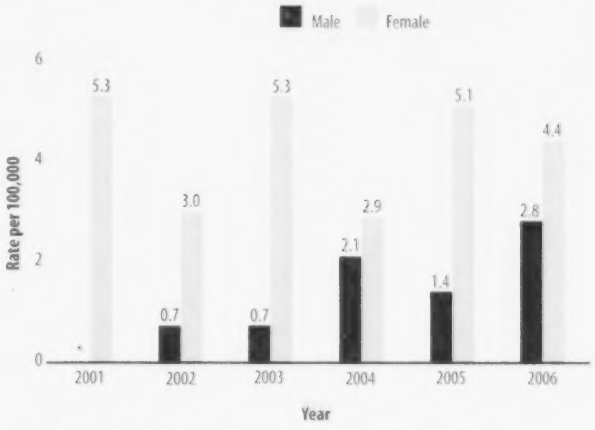
Source: British Columbia Centre for Disease Control, 2003, 2006.

Figure 4.31 Incidence of Chlamydia, BC Youths, 2001 to 2006 (Age 15 to 19 Years)



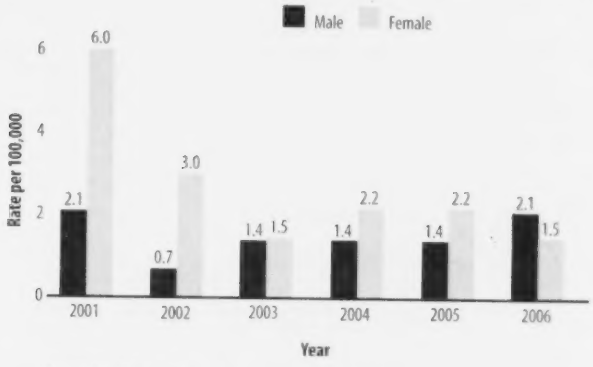
Source: British Columbia Centre for Disease Control, 2003, 2006.

Figure 4.32 Incidence of Syphilis, BC Youths, 2001 to 2006 (Age 15 to 19 Years)



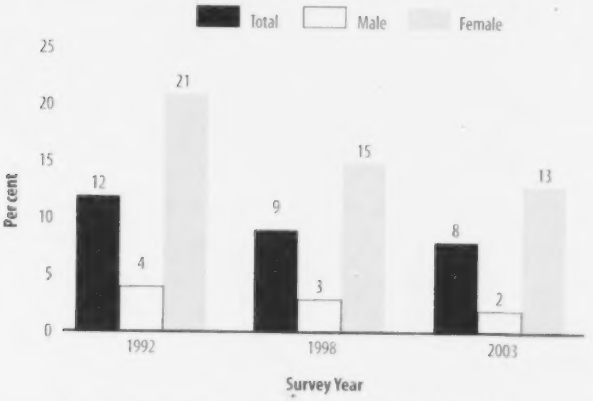
* There were no cases of syphilis for males in 2001.
Source: British Columbia Centre for Disease Control, 2003, 2006.

Figure 4.33 Incidence of HIV, BC Youths, 2001 to 2006 (Age 15 to 19 Years)



Source: British Columbia Centre for Disease Control, 2003, 2006

Figure 4.34 Students Who Have Been Sexually Abused, 1992, 1998, and 2003 (Grades 7 Through 12)



Source: McCreary Centre Society, Adolescent Health Survey, 1992, 1998, and 2003

Sexual Abuse

Sexual abuse can result in long-term emotional and physical damage to young children, and there needs to be quick and early treatment after it has occurred in order to minimize consequences. Between 1992 and 2003, the total percentage of students who reported having been sexually abused fell from 12 per cent to 8 per cent. However, in 2003, the self-reported sexual abuse rate for females was more than 6 times that for males (13 per cent versus 2 per cent) (Figure 4.34). For females, sexual abuse increased significantly with grade level: 16 per cent of Grade 12 females reported that they had been sexually abused, compared with 7 per cent in Grade 7.

While there are signs of improvement based on several indicators related to sexual activity among BC students and youth, concerns remain about risky methods of birth control and increasing rates of some sexually transmitted infections, especially among females.

Chapter 5

School Environment

Healthy School Environment

The school environment is very important for keeping students engaged, and is fundamental to a healthy school. A healthy school environment enhances young people's sense of social connectedness with teachers and peers, provides opportunities for meaningful engagement and valued participation in school life, and is related to a wide range of behavioural and mental health outcomes (Schoen, 2005; Xin, 2007). A positive school climate can also improve social and academic development. Five components found to be extremely relevant to a positive school environment are: quality of social interactions; feelings of respect/trust within the school; order and discipline; student interpersonal relations; and student-teacher relations (Peterson & Skiba, 2001).

A healthy school environment is not present until members of the school feel that they are safe, can trust each other, and have a sense of belonging. The need for belonging is a motivational need; belonging evokes strong, positive emotions (Osterman, 2002) that will consequently affect the behaviour of all school members in the school environment. School members, in turn, are influenced by the related factors of the attitudes, feelings, and behaviours of others within the school system (Schoen, 2005).

Data from the Canadian National Longitudinal Survey of Children and Youth showed that a classroom focus on academics when children are 10 to 13 years old was related to lower violence and property offences two years later (Sprott, 2004). High expectations are representative of the following behaviours: a commitment to professionalism, a belief that all students could and should be given the opportunity to reach their potential, and a commitment to improvement in teaching and learning (Barnett & McCormick, 2003).

Positive Attitude Towards School

The most basic component of school climate is whether or not students like school. Staff and adults working in the school can make a big difference to the school climate, particularly in terms of making it clear that they care about students, treat all students fairly, and will provide additional help to students when required.

Do Students Like School?

Survey results for BC students between 2001/2002 and 2006/2007 indicated some important trends in attitudes towards school. First, for all grades for which data were collected in the School Satisfaction Survey, female students had a more positive attitude about their school than male students. This is consistent with results from the 2003 AHS. Second, positive responses fell between Grades 3/4, 7, and 10, and then increased somewhat for Grade 12.

In 2006/2007, nearly 65 per cent of Grade 3/4 students indicated that they liked school, a decrease from nearly 70 per cent in 2001/2002. The percentage for Grade 7 students has hovered around 50 per cent; although this is a rather low figure, the trend over the years has been marginally upwards. For Grades 10 and 12, the trend has shown a consistent improvement over time. Grade 10 respondents who liked school went from 30 per cent to 42.2 per cent between 2001/2002 and 2006/2007, while Grade 12 respondents improved from nearly 35 per cent to nearly 48 per cent during the same time period (Figure 5.1).

Emotional Safety and the School Environment

Numerous researchers have expressed the importance of emotional safety in creating healthy school environments and school connectedness. Students in emotionally safe schools experience all of the following:

1. A sense of connectedness and belonging, of being welcomed and valued; being treated with respect, dignity, and acceptance.
2. The freedom to not be good at a particular skill, make mistakes, forget, or need additional practice and still be treated respectfully and with acceptance.
3. Encouragement and success; recognition, instruction, guidance, and resources according to need and regardless of need.
4. Having unique talents, skills and qualities valued, recognized and acknowledged.
5. Understanding and clarity (about requirements and expectations); predictability (consistency of follow-through); freedom from arbitrary, indiscriminate and unexpected punishment and reactivity.
6. The freedom from harassment, intimidation (including labeling, name-calling, ridicule, teasing, criticism or contempt) and threat of physical harm from adults or peers.
7. The freedom to make choices to influence learning, pursue personal interests and control various factors in the process of learning (such as content, presentations, media, location; social context, direction, specific assignments or approaches) based on personal needs and preferences.
8. The freedom from prejudice, judgment and discrimination based on physical characteristics and general appearance, religions, raci r cultural background, or sexual orientation.
9. The freedom from prejudice, judgment and discrimination based on academic, athletic, creative or social capabilities, modality or learning-style preferences, and temperament.
10. The freedom to have (and express) feelings and opinions without fear of recrimination.

Source: Bluestein, 2001, p. 10.

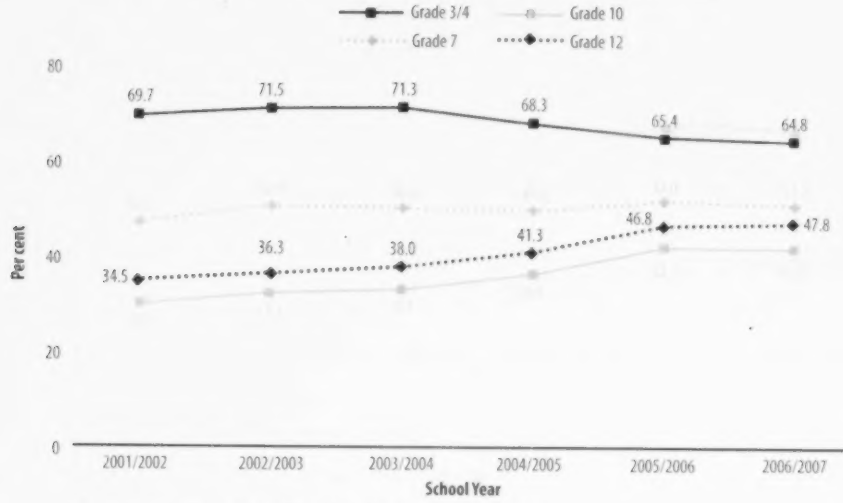
Connection with School Staff

In 2006/2007, 71 per cent (Grade 7) and nearly 90 per cent (Grade 3/4) of respondents felt that their teachers cared about them, while only about 40 per cent (Grade 10) and 49 per cent (Grade 12) felt that way (Figure 5.2). The higher grade students showed a slight improvement over time. However, this result is slightly at odds with the 1998 and 2003 AHS results, which indicated no change between the two survey years. Again, female students responded more positively than males, a result consistent with the 2003 AHS results.

Approximately 74 to 80 per cent of Grade 3/4, 60 per cent of Grade 7, 45 per cent of Grade 10, and 50 per cent of Grade 12 respondents felt that they were treated fairly by adults/staff in their school. The percentages for the youngest grade decreased between 2002/2003 and 2006/2007, while for the two highest grades, the trend showed a marginal improvement over the same time period (Figure 5.3). A large majority of respondents indicated that teachers helped with homework when needed (e.g., approximately 68 per cent to 82 per cent of all students in 2006/2007). This is a positive sign, although there was a slight reduction in this response among lower grades between 2002/2003 and 2006/2007 (Figure 5.4).

Figure 5.1

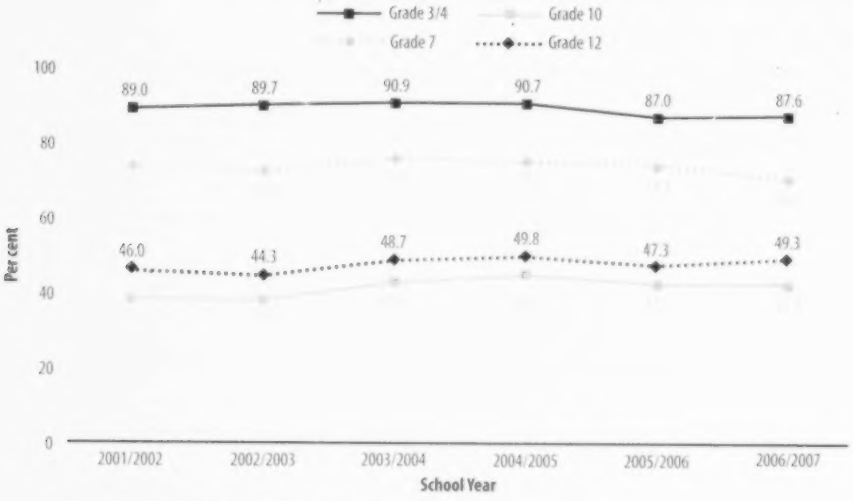
Students Who Liked School,*
2001/2002 - 2006/2007 (Grades 3/4, 7, 10, and 12)



* Percentage reporting "all of the time" or "many times" in response to the question.
Source: Ministry of Education, School Satisfaction Survey, 2001/2002 - 2006/2007.

Figure 5.2

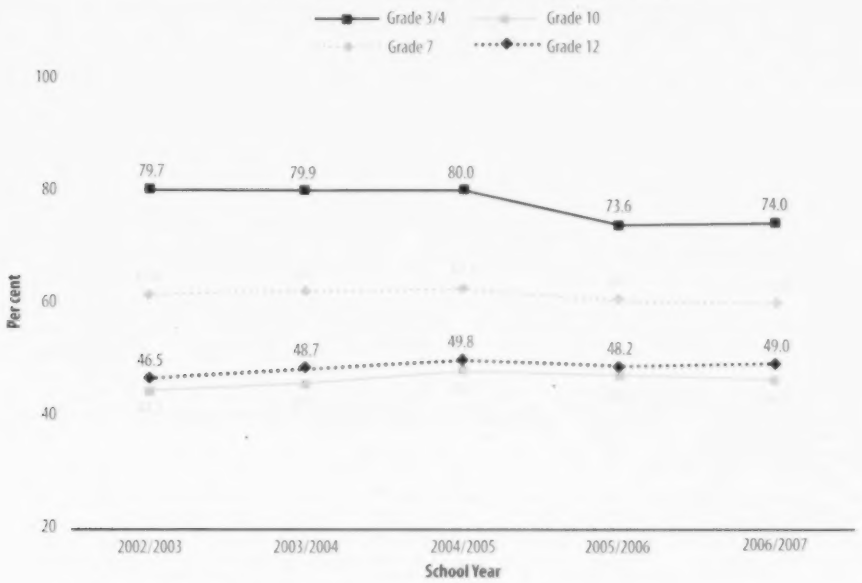
Students Felt That Teachers Cared About Them,*
2001/2002 - 2006/2007 (Grades 3/4, 7, 10, and 12)



* Percentage reporting "all of the time" or "many times" in response to the question.
Source: Ministry of Education, School Satisfaction Survey, 2001/2002 - 2006/2007.

Figure 5.3

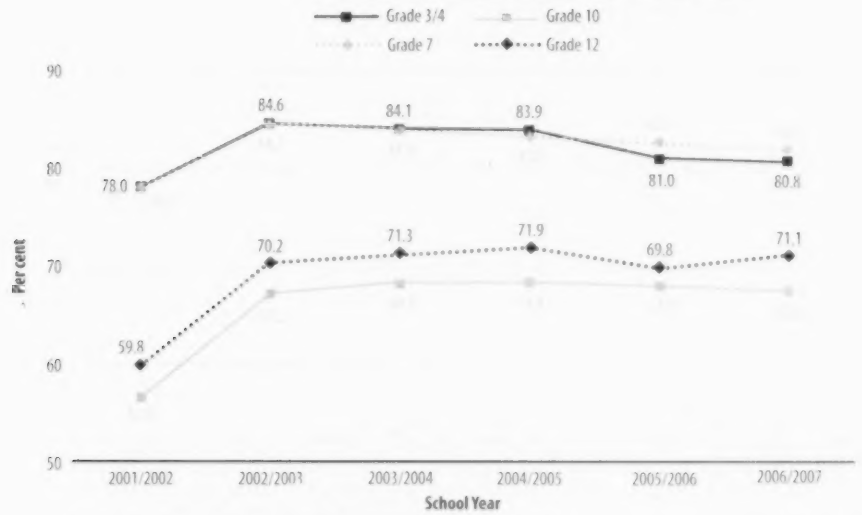
Students Treated Fairly by Adult Staff in the School,*
2002/2003 - 2006/2007 (Grades 3/4, 7, 10, and 12)



* Percentage reporting "all of the time" or "many times" in response to the question
Source: Ministry of Education, School Satisfaction Survey, 2002/2003 - 2006/2007

Figure 5.4

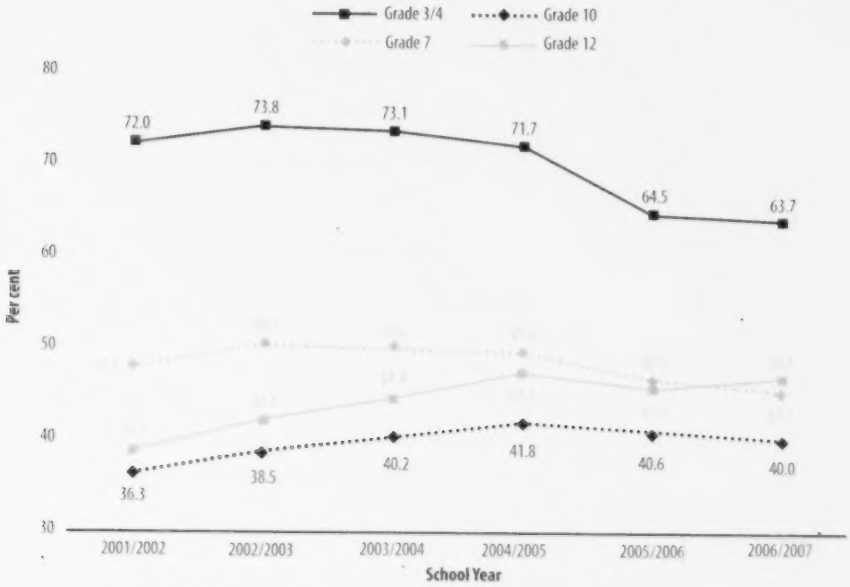
Teachers Helping Students with Schoolwork,*
2001/2002 - 2006/2007 (Grades 3/4, 7, 10, and 12)



* Percentage reporting "all of the time" or "many times" in response to the question
Source: Ministry of Education, School Satisfaction Survey, 2001/2002 - 2006/2007

Figure 5.5

Students Who Liked What They Were Learning in School,* 2001/2002 - 2006/2007 (Grades 3/4, 7, 10, and 12)

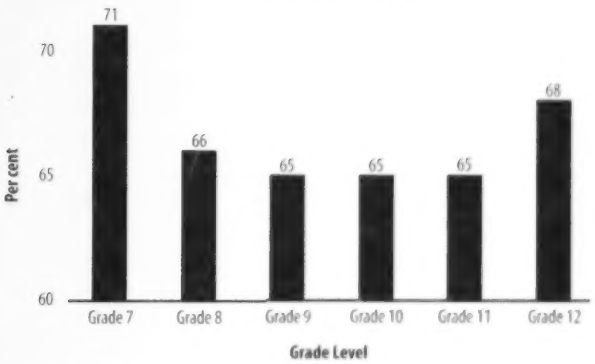


* Percentage reporting "all of the time" or "many times" in response to the question.
Source: Ministry of Education, School Satisfaction Survey, 2001/2002 – 2006/2007.

Do you like what you are learning in school?

When asked if they were satisfied with what they were learning in school, both Grade 3/4 and Grade 7 student responses showed a diminishing trend between 2001/2002 and 2006/2007, from 72 per cent to almost 64 per cent for Grade 3/4, and almost 48 per cent to 45 per cent for Grade 7. The two higher grades (Grades 10 and 12) showed some improvement over the same time period, especially Grade 12 students. In fact, in 2006/2007, the percentage of Grade 12 respondents who were satisfied with what they were learning was higher than the percentage of Grade 7 and Grade 10 respondents (Figure 5.5).

Figure 5.6 Mean School Connectedness Score, 2003 (Grades 7 Through 12)



Source: McCreary Centre Society, Adolescent Health Survey, 2003.

School Connectedness Index

The McCreary Centre Society has developed a school connectedness index based on a series of questions that assess responses to some of the indicators discussed earlier in this section. The score is created by averaging the responses to the seven questions asked; this average is standardized on a scale of 0 to 1, with a higher score denoting higher school connectedness. For presentation purposes in this report, the score has been multiplied by 100.

The questions used in the index were as follows:

- How do you feel about going to school?
- How much do you feel your teachers care about you?
- Since school started this year, how often have you had trouble getting along with your teachers?
- Since school started this year, how often have you had trouble getting along with other students?
- I feel like I am part of my school.
- I am happy to be at school.
- Teachers at school treat me fairly.

The level of connectedness scores decreased from Grades 7 to 9, remained the same for Grades 10 and 11, and increased for Grade 12 (Figure 5.6). Females had a higher connectedness score than males. Both these results are consistent with the data from the School Satisfaction Survey. The HSDA-level data show very clear geographical differences in values for students' connectedness or attachment to their schools. For example, Richmond and Fraser North HSDAs both had statistically significantly higher connectedness scores than the provincial average, while Thompson Cariboo Shuswap, North Vancouver Island, Northern Interior, and East Kootenay HSDAs had statistically significantly lower scores (Figure 5.7).

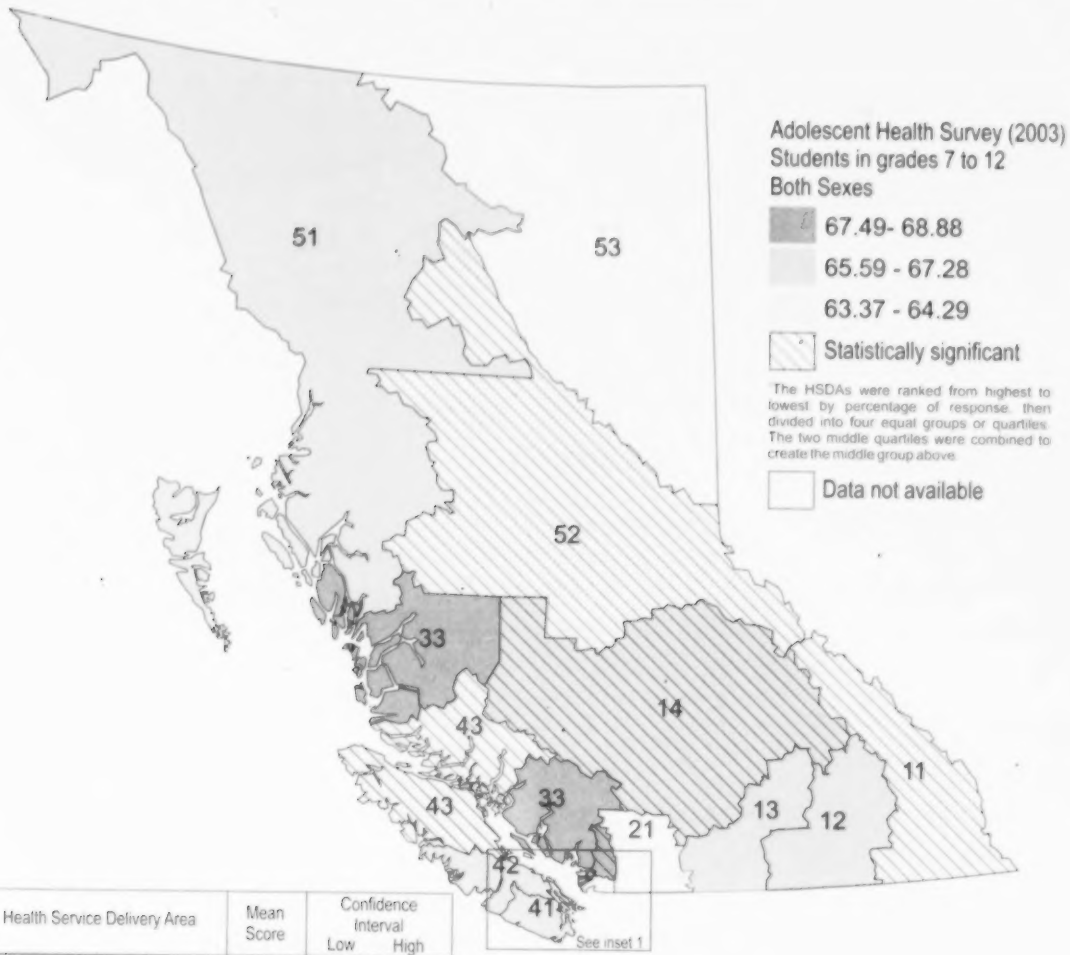
Analysis of AHS data related to connectedness confirms the importance of strong school connectedness in reducing the likelihood of students engaging in risky and unhealthy behaviours. For example, the likelihood that youth will smoke cigarettes, use marijuana, be involved in physical fights, or carry a weapon to school is reduced substantially as the level of school connectedness improves.

If students have strong school connectedness scores, they are less likely to have:

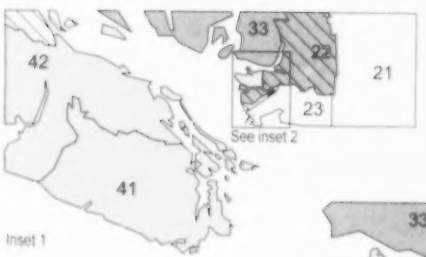
- Attempted suicide.
- Used hard drugs.
- Carried a weapon to school.
- Smoked cigarettes.
- Used marijuana.
- Binge drank.
- Committed drinking and driving.
- Been involved in a physical fight.
- Been pregnant/caused a pregnancy.
- Had sexual intercourse.
- Had poor health.
- Been physically inactive.
- Been at an unhealthy weight.

Figure 5.7

Mean School Connectedness Score, 2003



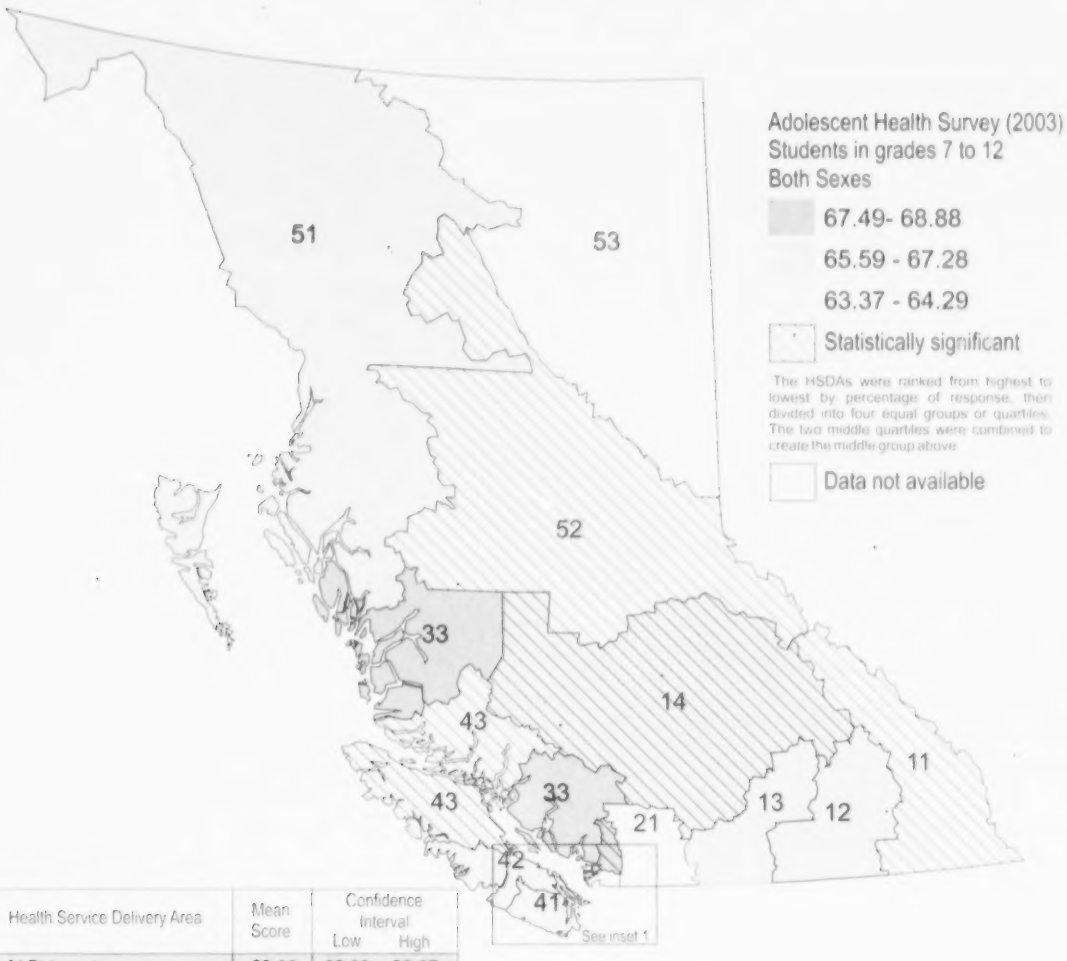
Health Service Delivery Area	Mean Score	Confidence Interval Low	High	
31 Richmond	68.88	68.09	69.67	+
22 Fraser North	67.84	66.83	68.84	+
33 North Shore/Coast Garibaldi	67.49	66.70	68.28	
41 South Vancouver Island	67.28	66.12	68.44	
13 Okanagan	67.20	66.28	68.12	
32 Vancouver	66.45	65.58	67.33	
42 Central Vancouver Island	66.40	65.53	67.26	
51 Northwest	66.14	64.97	67.31	
12 Kootenay Boundary	65.66	64.42	66.90	
14 Thompson Cariboo Shuswap	65.59	64.67	66.51	-
43 North Vancouver Island	64.29	63.04	65.55	-
52 Northern Interior	63.43	62.46	64.40	-
11 East Kootenay	63.37	62.19	64.54	-
21 Fraser East	N/A	N/A	N/A	
23 Fraser South	N/A	N/A	N/A	
53 Northeast	N/A	N/A	N/A	
99 British Columbia	66.72	66.62	66.82	



Confidence Interval (CI) is the term used when percentages are calculated based on a sample of the population. CIs estimate the margin of error and show the range within which the true percentage lies (listed in the table as low and high). These are 95% CIs, meaning that this sample, if repeated, would produce results in this range 95 out of 100 times.
+ indicates HSDA percentage is statistically significantly higher than the provincial rate
- indicates HSDA percentage is statistically significantly lower than the provincial rate
Map prepared with data from McCreary Centre Society, Adolescent Health Survey (2003).

Figure 5.7

Mean School Connectedness Score, 2003



Health Service Delivery Area	Mean Score	Confidence Interval Low	Confidence Interval High	
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52 Northern Interior	63.43	62.46	64.40	-
11 East Kootenay	63.37	62.19	64.54	-
21 Fraser East	N/A	N/A	N/A	
23 Fraser South	N/A	N/A	N/A	
53 Northeast	N/A	N/A	N/A	
99 British Columbia	66.72	66.62	66.82	

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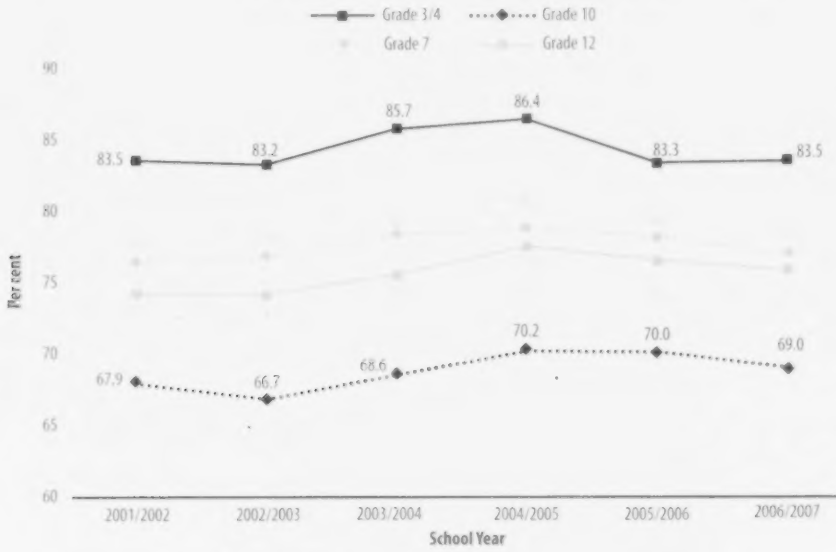
+ indicates HSDA percentage is statistically significantly higher than the provincial rate.
- indicates HSDA percentage is statistically significantly lower than the provincial rate.
Map prepared with data from McCreary Centre Society, Adolescent Health Survey (2003).

Figure 5.8

Students That Feel Safe at School,* 2001/2002 - 2006/2007 (Grades 3/4, 7, 10, and 12)



* Percentage reporting "all of the time" or "many times" in response to the question.
Source: Ministry of Education, School Satisfaction Survey, 2001/2002 - 2006/2007.

In addition, female students with strong school connectedness scores are less likely to have:

- Binged ate/gorged or vomited after eating (McCreary Centre Society, n.d., Connections to School; McCreary Centre Society, 2004a; 2006b; Tonkin, 2005).

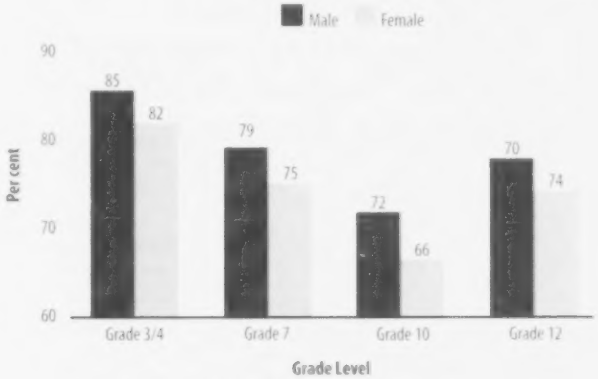
Given the importance of connectedness, School Satisfaction Survey data could be used to develop a connectedness or attachment index to more closely study the "best" schools/school districts, so that lessons learned and promising practices from schools/school districts with high levels of connectedness could be shared with others.

Feeling Safe at School

Feeling safe at school is an important requirement for learning and for a student's well-being. The School Satisfaction Survey has shown that from 2001/2002 to 2006/2007, the feeling of being safe in school has remained relatively constant for Grade 3/4, Grade 7, and Grade 10, and improved for Grade 12 (Figure 5.8). These results are consistent with the 2003 AHS. For each grade surveyed, females were less likely to feel safe than males (Figure 5.9), a result consistent with the SSSRS, but slightly at odds with the 2003 AHS. The School Satisfaction Survey showed large differences between school districts based on an average number of responses for the 4 grades participating in the survey; for example, for the 2005/2006 school year, there was a 20 percentage-point spread between the highest and lowest school districts, indicating the potential for improvement (Figure 5.10).

Figure 5.9

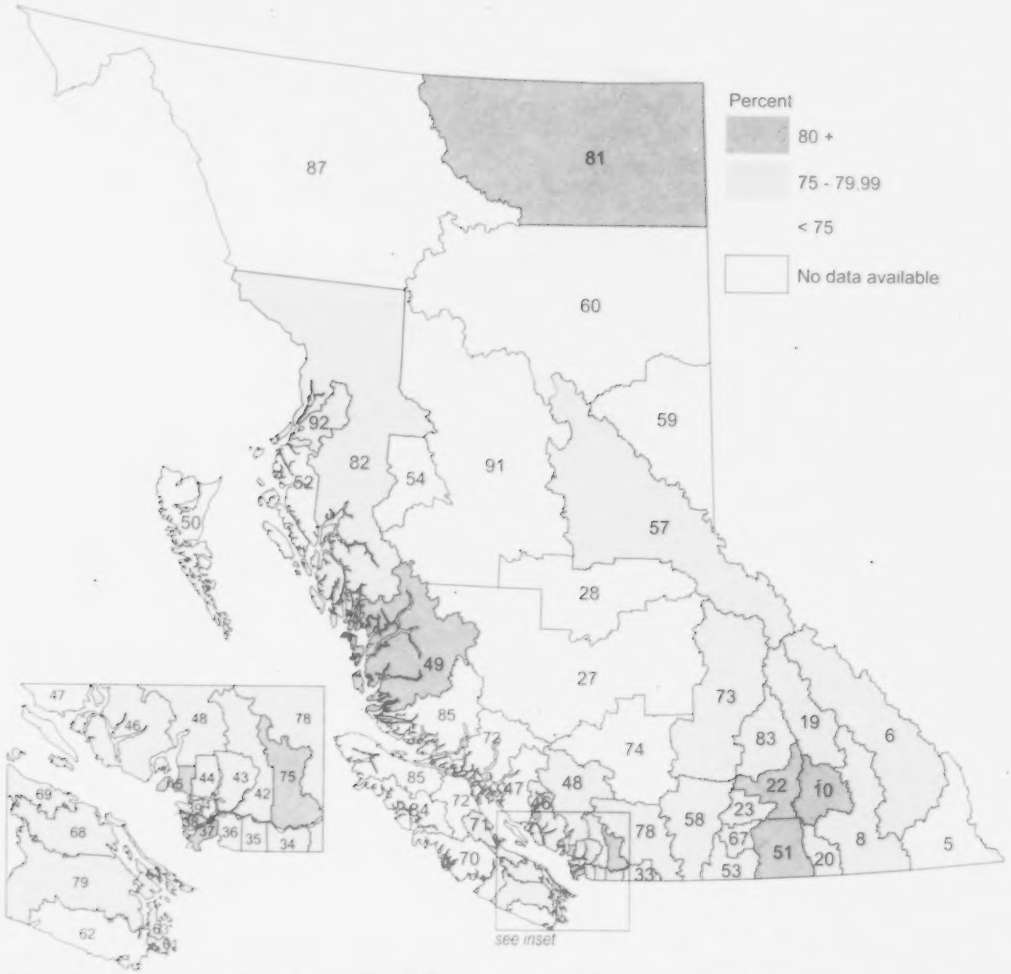
Students That Feel Safe at School, by Gender, 2006/2007 (Grades 3/4, 7, 10, and 12)



Source: Ministry of Education, School Satisfaction Survey, 2006/2007.

Figure 5.10

Feels Safe at School, 2005/2006*



School District	Percent	School District	Percent	School District	Percent
049 Central Coast	86	039 Vancouver	78	042 Maple Ridge-Pitt Meadows	75
045 West Vancouver	85	071 Comox Valley	77	041 Burnaby	74
051 Boundary	82	043 Coquitlam	77	050 Haida Gwaii/Queen Charlotte	74
081 Fort Nelson	82	073 Kamloops/Thompson	77	091 Nechako Lakes	74
038 Richmond	81	053 Okanagan Similkameen	77	052 Prince Rupert	74
010 Arrow Lakes	80	067 Okanagan Skaha	77	054 Bulkley Valley	73
037 Delta	80	069 Qualicum	77	072 Campbell River	73
075 Mission	80	019 Revelstoke	77	027 Cariboo-Chilcotin	73
022 Vernon	80	063 Saanich	77	059 Peace River South	73
023 Central Okanagan	79	034 Abbotsford	76	028 Quesnel	73
061 Greater Victoria	79	082 Coast Mountains	76	070 Alberni	71
064 Gulf Islands	79	040 New Westminster	76	060 Peace River North	71
008 Kootenay Lake	79	058 Nicola-Similkameen	76	062 Sooke	71
035 Langley	79	092 Nisga'a	76	074 Gold Trail	70
044 North Vancouver	79	083 North Okanagan-Shuswap	76	005 Southeast Kootenay	70
046 Sunshine Coast	79	057 Prince George	76	084 Vancouver Island West	70
079 Cowichan Valley	78	006 Rocky Mountain	76	047 Powell River	69
078 Fraser-Cascade	78	036 Surrey	76	085 Vancouver Island North	65
020 Kootenay-Columbia	78	033 Chilliwack	75	087 Stikine	NA
068 Nanaimo-Ladysmith	78	048 Howe Sound	75	093 Province	77

* Percentage reporting "all of the time" or "many times" in response to the question.
Source: Ministry of Education, School Satisfaction Survey, 2005/2006.

Figure 5.10

Feels Safe at School, 2005/2006*

School District	Percent	School District	Percent	School District	Percent
049 Central Coast	86	039 Vancouver	78	042 Maple Ridge-Pitt Meadows	75
045 West Vancouver	85	071 Comox Valley	77	041 Burnaby	74
051 Boundary	82	043 Coquitlam	77	050 Haida Gwaii/Queen Charlotte	74
081 Fort Nelson	82	073 Kamloops/Thompson	77	091 Nechako Lakes	74
038 Richmond	81	053 Okanagan Similkameen	77	052 Prince Rupert	74
010 Arrow Lakes	80	067 Okanagan Skaha	77	054 Bulkley Valley	73
037 Delta	80	069 Qualicum	77	072 Campbell River	73
075 Mission	80	019 Revelstoke	77	027 Cariboo-Chilcotin	73
022 Vernon	80	063 Saanich	77	059 Peace River South	73
023 Central Okanagan	79	034 Abbotsford	76	028 Quesnel	73
061 Greater Victoria	79	082 Coast Mountains	76	070 Alberni	71
064 Gulf Islands	79	040 New Westminster	76	060 Peace River North	71
008 Kootenay Lake	79	058 Nicola-Similkameen	76	062 Sooke	71
035 Langley	79	092 Nisga'a	76	074 Gold Trail	70
044 North Vancouver	79	083 North Okanagan-Shuswap	76	005 Southeast Kootenay	70
046 Sunshine Coast	79	057 Prince George	76	084 Vancouver Island West	70
079 Cowichan Valley	78	006 Rocky Mountain	76	047 Powell River	69
078 Fraser-Cascade	78	036 Surrey	76	085 Vancouver Island North	65
020 Kootenay-Columbia	78	033 Chilliwack	75	087 Stikine	NA
068 Nanaimo-Ladysmith	78	048 Howe Sound	75	093 Province	77

* Percentage reporting "all of the time" or "many times" in response to the question:
Source: Ministry of Education, School Satisfaction Survey, 2005/2006.

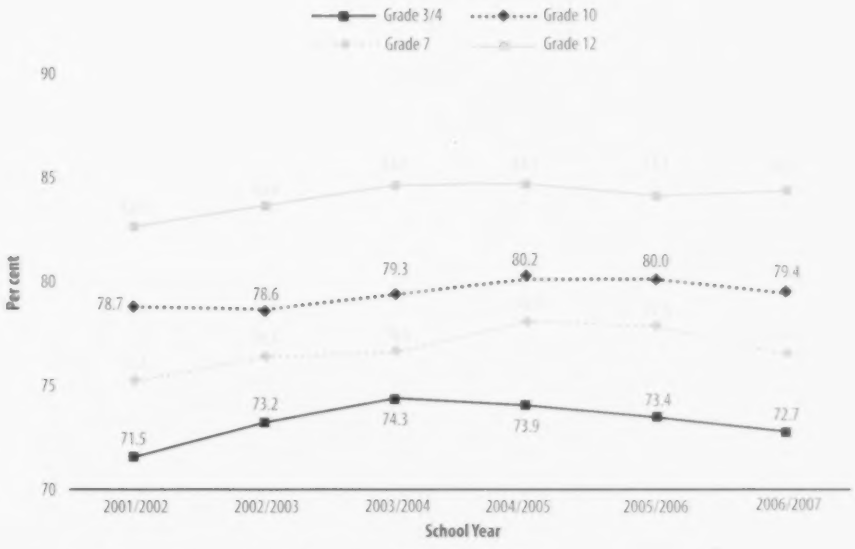
Bullying

Bullying has several characteristics, perhaps the most notable being an imbalance of power and behaviour repetition (Smith & Ananiadou, 2003). Bullying has several dimensions, including physical, psychological, or verbal actions with the intent of causing harm (Baldry & Farrington, 2007). The results of bullying on the victim can be low self-esteem, fear, and depression; over time, the degree and seriousness of bullying actions can intensify, moving beyond verbal insults and exclusion, and leading to injuries from physical violence and in extreme cases, suicide of those being bullied. For example, in the 2003 AHS, 3 per cent of all those surveyed indicated that they had been physically attacked or assaulted at least twice during the last 12 months while at school or on the way to or from school. Male students were more likely to have been attacked (5 per cent versus 2 per cent) as were those in younger grades (4 per cent in Grade 7 versus 2 per cent in Grade 12). These differences, while small, were significant. Over time, those bullied can become the aggressor, thus perpetuating the cycle. A more recent phenomenon has been the development of cyberbullying among students, which involves computer or text messaging to exclude, threaten, or humiliate.

There have been several surveys undertaken among students in the BC school system to assess bullying and related behaviour. The School Satisfaction Survey indicated that being bullied, teased, or picked on diminished with increasing grade level, and this was a consistent finding for the six school years from 2001/2002 to 2006/2007. In 2001/2002, nearly 83 per cent of Grade 12 students indicated that at no time or just a few times had they been bullied, teased, or picked on, compared to 84 per cent in 2006/2007. The percentage of Grade 3/4 students who were not bullied had improved from 2001/2002 (71.5 per cent) to 2003/2004 (74.3 per cent), but this percentage has since decreased (72.7 per cent were not bullied in 2006/2007) (Figure 5.11). It is encouraging that the 10 or so best school districts have achieved bullying and related behaviour levels of up to 25 per cent less than the provincial average, indicating that substantial improvements are possible.

Figure 5.11

Students That Were Not Bullied, Teased, or Picked On at School, 2001/2002 - 2006/2007 (Grades 3/4, 7, 10, and 12)



Source: Ministry of Education, School Satisfaction Survey, 2001/2002 - 2006/2007.

Table 5.1

Students Who Experienced Cyberbullying, 2006

	Experienced Cyberbullying			Practiced Cyberbullying		
	Total	Males	Females	Total	Males	Females
At School	11%	11%	10%	9%	11%	8%
Outside School	19%	16%	20%	17%	17%	17%
Created Problems at School	10%	8%	11%	9%	9%	9%

Source: Safe Schools and Social Responsibility Survey, 2006.

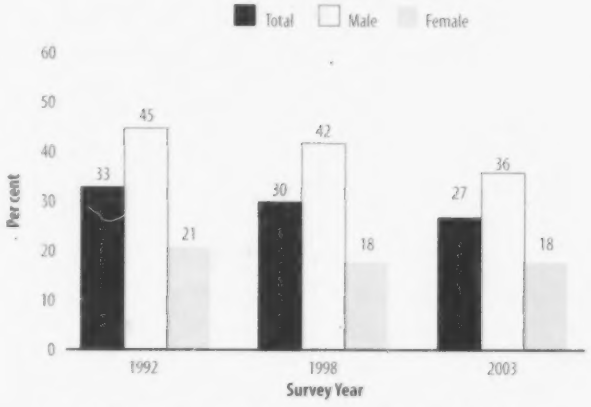
The AHS indicates that the amount of teasing has fallen over the survey years. In 1998, 56 per cent of student respondents reported that teasing had made them feel bad or extremely uncomfortable, compared to 36 per cent in 2003 (30 per cent males versus 39 per cent females). Unfortunately, this improvement has not extended to the incidence of verbal sexual harassment; in 2003, 53 per cent of females and 36 per cent of males reported being a victim of verbal sexual harassment, which are similar to the results reported in the 1998 AHS.

It is encouraging, however, that between 1992 and 2003, those engaged in at least one physical fight during the past 12 months decreased by one-fifth for males (45 per cent to 36 per cent) and by one-seventh for females (21 per cent to 18 per cent) (Figure 5.12).

Results from the 2006 SSSRS show that, in the 12 months before the survey, 11 per cent of students had been bullied and harassed at least once a month (and 38 per cent once or a few times in the last year), with male students suffering more than females (12 per cent versus 8 per cent). Further, 7 per cent of student respondents indicated that they had bullied or harassed others at least once a month over the same 12-month period; males were twice as likely to have behaved in this way as females (10 per cent versus 5 per cent). Another 31 per cent of all respondents indicated that they had bullied or harassed others at least once or a few times, a remarkably high figure.

Figure 5.12

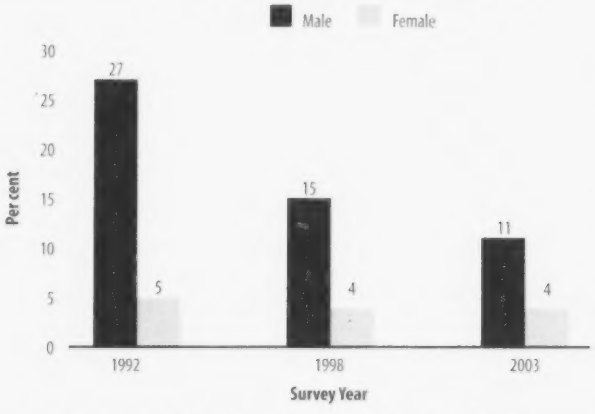
Involved in One or More Physical Fights in the Past Year, 1992,1998 and 2003 (Grades 7 Through 12)



Source: McCreary Centre Society, Adolescent Health Survey, 1992, 1998, and 2003.

The SSSRS also canvassed cyberbullying behaviour (using e-mail or text messaging). Approximately 11 per cent of all respondents indicated that they had been victims of cyberbullying at school, 19 per cent were victims outside of school, and 10 per cent responded that cyberbullying had caused them problems at school. There were marginally fewer student respondents who admitted to engaging in cyberbullying, but males were more likely to do so at school. More female students were cyberbullied outside of school and reported having problems at school because of cyberbullying (Table 5.1).

Figure 5.13 **Students Who Carried Weapons to School, 1992, 1998, and 2003 (Grades 7 Through 12)**



Source: McCreary Centre Society, Adolescent Health Survey, 1992, 1998, and 2003.

Carrying a Weapon

Having a weapon at school may be a way for some students to feel safe, or to intimidate others. The percentage of students carrying a weapon to school fell between 1992 and 2003, especially among male students (27 per cent to 11 per cent) (Figure 5.13). The 2003 AHS results are very similar to those from the SSSRS, which reported that 9 per cent of students (13 per cent of males and 4 per cent of females) had a weapon in school.

Safe Locations

Approximately 85 per cent of students rated the library as always or usually safe in the 2003 AHS, followed by classrooms (81 per cent), and cafeterias (70 per cent). Only 63 per cent of students rated washrooms and hallways as always or usually safe, and outside on school property in school hours was viewed as the least safe area (McCreary Centre Society, 2004a).

Respect for Others

Respecting others who are different in school helps to make the school a safe and healthy environment for learning. For female students, between 2001/2002 and 2006/2007, approximately 90 per cent or higher respected others who were different, although there was a small, but consistent decrease in the percentages between Grade 3/4 and Grade 10, with a slight increase in Grade 12. Percentages for males, however, were less than for females in each grade, and there was a larger decrease in the percentages for males between Grade 3/4 and Grade 10.

A trend that is troublesome is a small, but consistent decrease in the level of respect for others who are different over the last four years for all grades surveyed and for both genders, except for Grade 12 females (Figure 5.14). This finding is supported, in part, by results from the AHS, which indicated that between 1998 and 2003, a greater percentage of students felt discriminated against because of race or skin colour (10 per cent versus 12 per cent).

Vulnerable Students

While the vast majority of students thrive and make a successful and healthy transition into adulthood, there are several groups that are much more vulnerable to poor health and unhealthy, risky behaviours. This section focuses on four groups in particular: children in government care; students who have suffered abuse or reported a challenging home life; lesbian, gay, or bisexual students; and marginalized or street youth. Given the tendency for adolescent behaviours to cluster, there are many crossovers among these groups of vulnerable students. Many of these students have poor school attendance records, skip classes, and run away from home, and may drop out of school because of a variety of factors, such as an unwelcoming school environment.

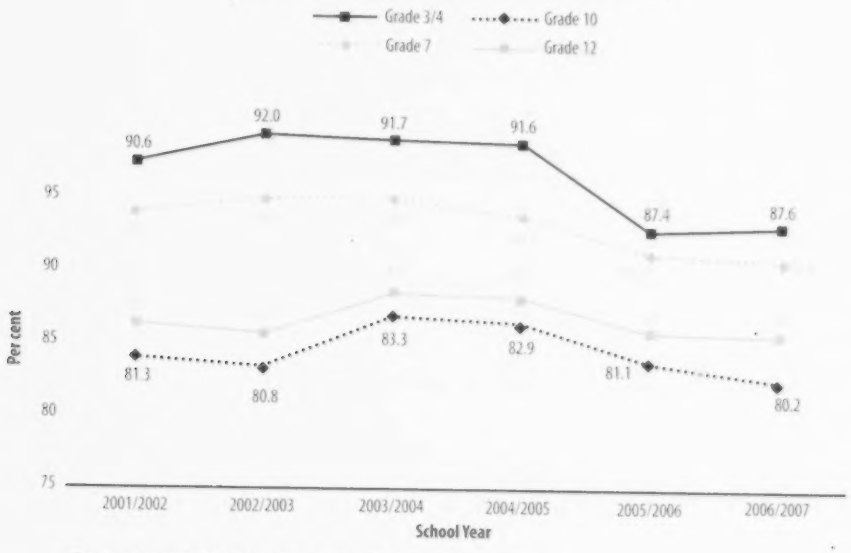
Children in Government Care

Children and youth in care constitute a highly vulnerable group for poor health and life outcomes. Within BC, approximately 1.5 per cent of the 0- to 18-year-old population are in care during the course of a year; at a single point in time, about 1 per cent of children are in government care in BC (9,165 in December 2007).[1] Currently, more than half (51.7 per cent) of these children are Aboriginal. The majority of these children come from families that are disadvantaged in

[1] *The 9,165 figure does not include those children living with a grandparent or other relative (M. Wright, personal communication, February 29, 2008).*

Figure 5.14

Students Respecting People Who Are Different From Them,* 2001/2002 - 2006/2007 (Grades 3/4, 7, 10, and 12)



* Percentage reporting "all of the time" or "many times" in response to the question.
Source: Ministry of Education, School Satisfaction Survey, 2001/2002 - 2006/2007

many ways, may be dysfunctional, and are often characterized by inadequate income or drug and alcohol issues. Many of these children come from single-parent families whose sole income is from government income assistance programs. Reasons for being in care vary, but major reasons include an inability/unwillingness of parent(s) to care for a child, or neglect of a child by a parent, sometimes with physical or emotional harm (Foster & Wharf, 2007).

A recent study of children who were permanently in care in BC documented their poor health status. These children were highly vulnerable to mental disorders and injuries and required more health services to address common health problems than children and youth who had never been in care. Children in continuing government care in BC are more likely to:

- Have common health conditions.
- Require more services to address common health conditions.
- Have mental disorders, and a higher prevalence of depression and anxiety.
- Have a higher prevalence of respiratory conditions.
- Have higher mortality from intentional and unintentional injuries (e.g., poisoning, motor vehicle accidents, suicide).
- Have higher mortality rates from natural causes.
- Have earlier and higher rates of pregnancy and contraception use (Adapted from Child and Youth Officer for British Columbia [CYO] & PHO, 2006).

Not only did children in care have relatively poor health status, but those who had left care had poorer health status and much higher death rates in the first few years after leaving government care than did young adults of the same age in the general population (CYO & PHO, 2006).

Research elsewhere has shown that the prospects into adulthood for children who had been in care are not good. As adults they have significantly higher depression scores, lower scores on marital happiness, less intimate parental relationships and a higher incidence of social isolation than adults who had not been in care. Many of the homeless population has been through the government care system at one time (Foster & Wright, 2002).

From an educational standpoint, children in care do not fare very well. Children in government care in BC are more likely to:

- Have special needs related to behavioural/serious mental health issues (especially males).

- Have changed schools more frequently.
- Have less likelihood of graduating high school within six years of Grade 8 enrolment.
- Enter school less prepared to learn.
- Fall further behind over time.
- Be vulnerable on all dimensions of the Early Development Instrument.
- Not acquire fundamental reading, writing, and numeracy skills to meet high school needs.
- Less likely to be assessed through the Foundations Skills Assessment Process.
- Less likely to make it to Grade 12. Those who do are a grade or more behind.
- Have lower grade point averages than those who did graduate.
- Not graduate in the academic stream of school, for those who graduate.
- Not go to post-secondary education, for those who graduate in the academic stream.
- Drop out, especially after age 16 (Adapted from Representative for Children and Youth & PHO, 2007).

By any indicator of educational milestones, the achievements of these children are substantially below the achievements of those children who have never been in care, and, as such, their prospects over their lifetime, without targeted major supports, remain somewhat diminished. Nevertheless, some children in care are able to thrive, despite the disadvantages, and research on those children who are resilient and do well may hold the key to discovering the important assets that help them thrive (Representative for Children and Youth & PHO, 2007). Learning from those who do thrive in this situation may help others do the same.

Students Who Have Suffered Abuse or Reported a Challenging Home Life

Based on the 2003 AHS results, approximately one in five students have been abused, physically and/or sexually, by the time they reach Grade 12 (Saewyc, Wang, Chittenden, Murphy, & McCreary Centre Society, 2006). Females were nearly twice as likely to report having been abused than males (25 per cent versus 14 per cent).

Physical and sexual abuse are among some of the most damaging influences on the mental and emotional health and well-being of young people. For example, students who had been abused were significantly more likely to have attempted suicide, had a substance use problem, or been involved in violence in the last year than students who had not been abused. Abused female students were more likely than abused male students to have attempted suicide (22 per cent versus 12 per cent) and have a slightly higher substance use problem (18 per cent versus 16 per cent). Abused males were more than twice as likely as females to have engaged in violence (30 per cent versus 14 per cent). Abused students have significantly lower grades, have lower post-secondary aspirations, and are less likely to report good or excellent health (Saewyc et al., 2006).

Students who had challenging home lives[2] had difficulty staying connected with supportive adults and school, and maintaining positive relationships with peers. The survey results for this group of vulnerable students were very similar to the results for students who had been abused, with reports of high levels of suicide attempts, substance use problems, and a greater tendency for violence. School marks and post-secondary aspirations were lower for this group than for other, non-vulnerable students, and they were less likely to rate their health as good or excellent.

[2] *These are students who in the past year had done at least one of the following: moved three or more times; lived in a foster or group home; run away from home; or worried a lot about violence, drinking, or drug use in their home.*

While this group of students is vulnerable to unhealthy behaviours, poorer health, and poorer educational achievements, analyses have shown that there are several key factors that act as assets or protective factors, and increase the level of resiliency for these students. These protective factors are: the school environment, school connectedness, feeling safe at school, liking school, family connectedness, and having friends with healthy attitudes about risky behaviours.

Lesbian, Gay, and Bisexual Students

Sexual identity and sexual orientation start to emerge during adolescence, along with sexual and romantic attractions. Those who are not heterosexual are often stigmatized by the majority who are heterosexual. This can lead to being ostracized or shunned, and can result in lesbian, gay, or bisexual (LGB) students separating themselves from school, family, and friends and partaking in risky and unhealthy behaviours.

Within the BC school student population, there were approximately 2 to 4 per cent self-identified LGB students; LGB students were found in all ethnic groups, all regions, and in all grades from Grade 7 to 12 (Saewyc et al., 2007). A detailed analysis has shown that LGB students took part in more risky behaviours than heterosexual students. For example, relative to other students, LGB students were more likely to be current smokers (with the exception of lesbian youth); to have tried hard drugs; to have reported emotional stress, hopelessness, suicidal ideation, and suicide attempts; to be sexually experienced at an earlier age; and to have been pregnant or got someone pregnant. In addition, they were less likely to participate in sports and physical activity.

Further, LGB students were more likely than heterosexual students to have experienced abuse (both physical and sexual), harassment in school, and discrimination in the community. LGB students also felt that their parents cared about them less than heterosexual students, felt less connected to their family, and were more likely to have run away from home at least once in the last year. Lesbian and bisexual females were particularly less connected to school (Saewyc et al., 2007).

Assets or protective factors related to the school environment were somewhat mixed for the LGB student population. For factors such as school connectedness, liking school, and feeling cared for by teachers, lesbian or bisexual female students had consistently lower scores than heterosexual female students. Gay students felt teachers cared about them more than heterosexual students but had lower scores for school connectedness and liking school. On the other hand, bisexual male students liked school much more than all of the other groups (Tables 5.2 and 5.3).

Table 5.2 Levels of Protective Factors – Males, 2007

Protective Factor (Score Range)	Heterosexual	Mostly Heterosexual	Bisexual	Gay
How much parents care (1-3)	2.87	2.83	2.69	2.78
Family connectedness (1-3)	2.59	2.51	2.40	2.47
How much teachers care (1-5)	2.89	3.10	2.90	2.99
How much like school (1-5)	2.73	2.92	3.16	2.63
School connectedness (1-5)	3.42	3.50	3.43	3.32
Think of self as religious or spiritual (1-3)	1.61	1.66	1.72	1.68

Note: Scores are age-adjusted; higher score equals higher caring or connectedness.
Source: Saewyc et al., 2007.

Table 5.3 Levels of Protective Factors – Females, 2007

Protective Factor (Score Range)	Heterosexual	Mostly Heterosexual	Bisexual	Lesbian
How much parents care (1-3)	2.86	2.78	2.63	2.51
Family connectedness (1-3)	2.55	2.43	2.26	2.20
How much teachers care (1-5)	3.02	2.96	2.79	2.70
How much like school (1-5)	3.00	2.90	2.73	2.88
School connectedness (1-5)	3.58	3.44	3.25	3.18
Think of self as religious or spiritual (1-3)	1.78	1.71	1.79	1.85

Note: Scores are age-adjusted; higher score equals higher caring or connectedness.

Source: Saewyc et al., 2007.

Marginalized or Street Youth

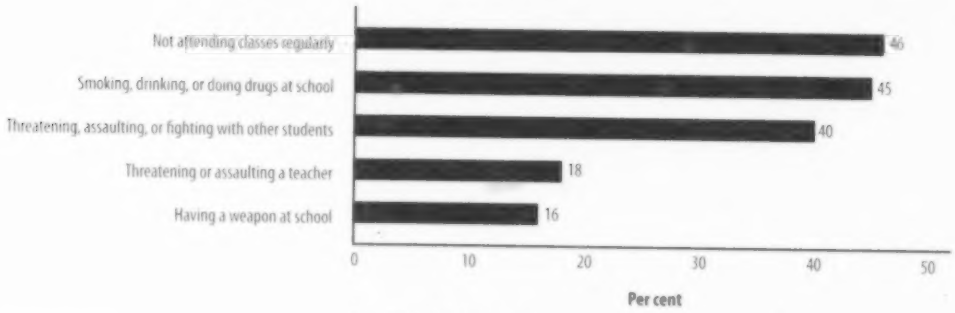
Many of those who are marginalized, live on the street, or are street-involved, come from the vulnerable groups already described: they had been abused, had challenging home lives, had sexual orientations that were not shared by the majority of people, and/or had been in care. In a recent survey of those youth who were street-involved, 54 per cent indicated Aboriginal heritage, 40 per cent had been in care at some time, fewer than 60 per cent identified themselves as being exclusively heterosexual, and more than 20 per cent were gay, lesbian, or bisexual (Smith et al., 2007). Their health risks were similar to the other vulnerable groups already described. The lives of these young people are very complex and often dangerous. On a daily basis, they face issues related to sexual exploitation, violence, continued abuse, and outright discrimination. More than 50 per cent became street-involved by the time they were 14 years old.

Remarkably, 62 per cent of the surveyed street youth started school in September 2006 (28 per cent in mainstream schools and 34 per cent in alternative schools), but between October and December 2006, 13 per cent had left school for a variety of reasons. Of these students, three-quarters had dropped out, while the remaining students had been asked to leave for a variety of reasons. The most common reasons were: not attending class regularly; smoking, drinking, or doing drugs at school; or threatening, assaulting, or fighting with other students (Figure 5.15). Nevertheless, more than a quarter (26 per cent) of street-involved youth still planned to graduate from a post-secondary institution (12 per cent from university and 14 per cent from a community college/technical institute).

Children and youth in these four vulnerable groups have many common characteristics; for example, they often come from low-income homes, violent and less nurturing families, and unsafe neighbourhoods with few community assets. In addition, a disproportionate number of this vulnerable population are Aboriginal. Many become school "outcasts", as they find the school environment not particularly welcoming, or they require more supports but do not receive them. Overall, they are very vulnerable to not completing their high school education, thus jeopardizing their future development and their health.

Figure 5.15

Most Common Reasons for Being Asked to Leave School, 2006 (Marginalized and Street-Involved Youth)



Source: McCreary Centre Society, 2006a

Chapter 6

Improving the Health of Children in BC Schools

This chapter of the update contains two parts. The first part provides a brief review of literature (primarily 2003 to 2007), which discusses school-based programs that address the issues of health and health-related behaviours included in this report. Where relevant, specific Canadian studies are included. The second part looks at responses and developments that have occurred in BC since the original report was delivered in 2003.

Brief Literature Review

Nutrition, Weight, and Physical Activity

Analysis within Canada has shown that the rates of childhood overweight and obesity increase from west to east (Willms, Tremblay, & Katzmarzyk, 2003). Factors that determine healthy eating in children and youth have been classified as being related to collective determinants, physical environments, and individual determinants (Taylor, Evers, & McKenna, 2005). Collective factors include economic determinants; for example, in lower income families, the cost of food is an important consideration and often leads to food choices that are less expensive but higher in fat and sugar. Parental education also influences food choice. Lower incomes often go hand-in-hand with lower education levels and those parents who are unable to accurately interpret nutrition information are likely to make less nutritious food choices (Veugelers & Fitzgerald, 2005b). Other findings show that when meals are eaten together, both children and parents tend to eat more nutritious foods. However, in families where both parents work, or in single-parent families, there is usually less time for food preparation, less meals eaten together, and less nutritious food prepared (Veugelers & Fitzgerald, 2005b).

The school environment also contributes to children being overweight or obese. When food is provided by a food service company (catering or fast food), children are more likely to make less nutritious choices than in schools where lunch or breakfast programs are available. Similarly, studies have shown that schools providing less nutritious choices in vending machines often have students who make unhealthier food choices and who are at an increased risk for overweight and obesity (Veugelers & Fitzgerald, 2005b).

Encouraging children to eat healthy foods because of the health benefits can be challenging. Food and beverage companies use creative slogans and logos, particularly through television, to influence the food and beverage choices of children and youth at school, at home, and in the community (Institute of Medicine, 2005). With the increase in computer and Internet use, magazine ads, and other media advertising targeted to this population, commercial marketing is reaching an even larger number of young consumers. Advertising of candy, sugar-sweetened beverages, and salty snacks can affect the food preferences of children and youth and can lead to high calorie, low-nutrient food choices. These food choices can be out of balance with healthy eating recommendations and put the child or youth at risk of overweight and obesity (Taylor et al., 2005; Institute of Medicine, 2005). Various sectors of society such as the food industry, schools, and government have been encouraged to address marketing strategies and promote healthier, more nutritious food options to children and youth.

Recently, school-based healthy eating and physical activity programs have been identified as opportunities to enhance the health and well-being of children and deal with the issues related to overweight and obesity (Davidson, 2007). Results from program initiatives suggest that key school-based interventions should:

- Be based on evidence and promote specific behaviour changes (Ciliska, 2004).
- Include both nutrition and physical activity (Veugelers & Fitzgerald, 2005a).
- Be tailored to age, gender, and ethnicity.
- Be enhanced by mass media.
- Involve multiple groups such as children, school boards, parents, community organizations, and the private sector (Micucci, 2004).
- Involve government agencies and political action.
- Be long-term, large scale, and sustainable.
- Encourage role-modelling behaviours.
- Be applicable in other key health settings.

Other research has suggested that strategies to prevent and/or reduce overweight and obesity in youth should focus on increasing physical activity and decreasing television viewing time (Janssen et al., 2005). One review, which used expert panels, concluded that school-aged youth needed to have at least 60 minutes of moderate to vigorous physical activity daily that was "developmentally appropriate, enjoyable and involves a variety of activities" (Strong et al., 2005, p. 732). However, *Canada's Physical Activity Guide for Youth* suggests that youth engage in at least 90 minutes of physical activity per day to promote growth and to achieve a healthy weight (Public Health Agency of Canada, 2002).

Studies have shown that while young people have a positive attitude towards healthy eating, the lack of knowledge about healthy eating and nutrition among teachers and peers has an impact on food choice (Shepherd et al., 2006). Students are not exposed to the necessary information to make educated choices regarding healthy foods. Barriers to healthy eating in the school setting are also associated with the lack of healthy meals available in schools, the expense of healthier options, and personal taste preferences for fast foods. Young people also view healthy foods as something that parents and other adults would provide and fast foods with pleasure, friendship, and their social environment (Shepherd et al., 2006). Facilitating healthy eating among students could include reducing the price of healthy foods, providing parents with nutrition education to foster family support, and providing more information about the nutritional content of healthy foods. Associating healthy foods with personal appearance, either improving or maintaining, was also indicated as a strategy to engage young students to make healthier food choices (Shepherd et al., 2006).

While the attitude towards healthy eating among young people has been positive, there is growing concern that obesity prevention programs may be doing more harm than good by unintentionally creating body image and weight concerns, dieting, disordered eating, and eating disorders (O'Dea, 2004). It is possible that health education messages about the risks of being overweight or obese, or the benefits of weight control, may negatively affect self-esteem and body image. It is therefore necessary to differentiate between the health education messages required for those receiving treatment versus prevention programs, and ensure that teachers and health professionals are properly trained to deliver the messages appropriately to young people (O'Dea, 2004; Doak, Visscher, Renders, & Seidell, 2006).

Mental Health

Several studies have argued that schools are key settings for promoting the emotional and social well-being of children. In their study, Green, Howes, Waters, Maher, & Oberklaid (2005) showed that the effectiveness of prevention programs comes from a sustained focus on the promotion of mental health, on self-esteem and coping outcomes within the broad school climate, and on the replication of positive impacts rather than the prevention of mental health problems. However, conclusions from their research were limited by the short duration of the study; the lack of detail on the interventions, identified outcomes, and socio-demographic data; and the relationship between processes and outcomes. This study has clearly shown how crucial carefully designed studies are in understanding those strategies with the potential to impact on the mental health and well-being of children.

Numerous programs are in place to help reduce behaviour problems in school-aged children (Browne, Gafni, Roberts, Byrne, & Majumdar, 2004). A synthesis of reviews of such programs indicated that the following factors were important: "early, long-term intervention including reinforcement, follow-up and an ecological focus with family and community sector involvement; consistent adult staffing; and an interactive, non-didactic programming adapted to gender, age and cultural needs" (Browne et al., 2004, p.1367).

The most effective school programs that address mental health provide universal promotion at an early stage, and then target those with special needs, such as vulnerable and at-risk groups (Weare & Markham, 2005). These programs are also multi-dimensional, create supportive climates with positive expectations and clear boundaries, involve end-users and their families in ways that encourage a feeling of ownership and participation, and provide effective training for those who run the programs.

A systematic review of universal approaches to mental health promotion in schools has shown that such approaches can work if they take a whole-school approach, are implemented continuously for more than a year, and are aimed at promotion of mental health rather than the prevention of mental illness (Wells, Barlow, & Stewart-Brown, 2003). West, Sweeting, and Leyland (2004) reviewed initiatives that promote mental health, including programs on preventing violence and aggression. They found that involvement of the whole school, changes to the school psychosocial environment, personal skill development, involvement of parents and the wider community, and implementation over a long period of time were important to success. Programs to improve conflict resolution and reduce violence and aggression were among the most effective. Programs that were intended to prevent suicides showed evidence of beneficial effects for suicide prevention, but the less rigorous studies also identified negative/harmful effects in young males. Programs for developing self-esteem were less effective (West et al., 2004).

Focusing on all students and changing the school climate are likely to be more effective than short, class-specific prevention programs. Research has also shown that short-term mental health literacy programs aimed at dispelling the stigma related to mental illness, particularly schizophrenia, have worked in school settings in the United Kingdom and Canada (Pinfold, Stuart, Thornicroft, & Arboleda-Florez, 2005).

More recently, a review of 15 randomized controlled trials indicated that: conduct disorder programs had some success when targeted to at-risk children in the early years, with the use of parental training or child social skills training; universal cognitive-behavioural training was successful for anxiety issues; and that targeted cognitive behavioural training for at-risk, school-aged children also had some success for depression (Waddell, Shepherd, & Barker, 2007). The review suggested that a public health strategy for children's mental health in Canada should promote the healthy development of all children, prevent disorders for at-risk children, and provide treatment for children with disorders. Some of the same authors have noted, however, that although a chapter was devoted to children in the recent Canadian report on mental health (Kirby & Keon, 2006), only 10 of the 118 recommendations specifically targeted young people (McEwan, Waddell, & Barker, 2007); this indicates that little progress has been made in recognizing the need for resources for children's mental health (Waddell, McEwan, Shepherd, Offord, & Hua, 2005).

Among teens, one of the greatest threats to physical health is self-harm and suicide. A major systematic review of population-based studies of factors associated with adolescent suicidal phenomena discovered strong evidence for an association with family suicide behaviour, and with stress factors including depression, alcohol abuse, use of hard drugs, mental health problems, suicidal behaviour among peers, family discord, and poor peer relationships. Other vulnerability factors included living apart from parents, antisocial behaviour, sexual abuse, physical abuse, and unsupportive parents (Evans, Hawton, & Rodham, 2004). There is also evidence of an association with poor communication with family; and the stress-vulnerability factors of hopelessness, eating disorders, smoking, drug use, sleep difficulties, media exposure to suicide, low self-esteem, poor physical health, physical disability, and sexual activity.

One of the most evaluated school-based programs related to mental health is the FRIENDS for Life program, a school-based, early intervention and prevention program that reduces the risks of anxiety disorders and helps build

resilience in children (see, for example, Barrett, Farrell, Ollendick, & Dadds, 2006; Farrell & Barrett, 2007; FRIENDS for Life, 2007). More information on the FRIENDS for Life program can be found later in this Chapter.

Sexual Behaviour and Health

During adolescence, sexual behaviour and its health-related effects become quite prominent. Schools provide sex education as well as instruction related to safe sexual practices. Some programs take a "sexual abstinence approach," while others follow a much broader, harm reduction approach that includes instruction on contraception and information on sexually transmitted infections. There is some debate about these approaches, as some believe that providing information about contraception only encourages sexual activity among teens.

Abstinence approaches tend to focus on non-sexual factors such as skills, (e.g., goal-setting), ideals (e.g., fidelity, friendships), and psychological factors such as self-esteem (Wilson, Goodson, Pruitt, Buhi & Davis-Gunnels, 2005). Comparisons between American abstinence-only programs and programs that also include contraception information indicated no increase in sexual activity among students that took part in the program that included contraception information (Taylor, Evers, & McKenna, 2005). For the latter students, there was improved contraception knowledge and those who did engage in sexual activity had a greater likelihood of using contraceptives.

Abstinence-only programs had only modest impacts on sexual behaviour, which lasted only a short time (Bennett & Assefi, 2005; Silva, 2002). Analyses of the impacts of numerous sex and HIV education programs in schools and communities in many countries indicated that many programs had significant limitations related to study design, measurements, etc. The results were somewhat mixed in terms of reducing risky sexual behaviours, although overall, impacts were considerably more likely to be positive than negative (Kirby, Laris, & Rolleri, 2006).

In a survey of students in the United Kingdom, sex education in schools varied substantially in content and quality. Teachers often appeared embarrassed, thus resulting in little discussion and information on sexually transmitted diseases. Students felt it would be important to have an organized visit to a sexual health/contraceptive clinic as part of their education. Overall, conclusions from this survey focused on the need for early and more comprehensive sex education, provided by experts who were not embarrassed to deliver the information (Lester & Allan, 2006).

In reviewing sexual health education perspectives in the United Kingdom, Evans and Tripp (2006) noted that "behaviourally effective interventions which delay onset of first intercourse and reduce other sexual risk-taking behaviour amongst adolescents run counter to the educational orthodoxy" (p. 95). Based on Lewis and Knijn (2001), Evans & Tripp (2006) argue that the heart of the problem in providing adequate sexual health education is the failure to accept adolescent sexuality. Sex is included with dangerous and risky behaviours such as smoking, alcohol, and drug use. In Holland, however, schools treat sex and relationships "as a normal and positive part of a wide spectrum of healthy relational needs" (Evans & Tripp, 2006, p. 97). Evans and Tripp continue that "all the scientific evidence suggests that what is needed is a shift towards improving the all around quality of young people's relationships, and enabling them to develop more mature attitudes to the place of intercourse in intimate relationships" (p. 97).

A recent discussion on sex education noted the importance of taking a health promotion approach based on evidence, driven by needs, and subject to evaluation and an ecological perspective (Schaalma, Abraham, Gillmore & Kok, 2004). Schaalma et al. noted that young people who have developed a variety of social skills related to romantic and sexual relationships are less likely to engage in unprotected sexual intercourse. These same skills are important to the development of other health behaviours. The need for consistent and specialist skills in program design and delivery of sex education instruction are major requirements. Major constraints, however, are related to local social and cultural considerations and consequential policy initiatives.

Substance Use

While much has been written about the importance of the school setting in preventing or delaying the initiation of harmful substance use by students, or in encouraging and promoting the reduction or cessation of harmful substance

use by students, young people nevertheless become users. Some may only be experimental or occasional users, while others may be regular, heavy users. Research has shown that young people may use marijuana (and other substances) as a way of demonstrating independence, developing values distinct from parental and society authority, developing strong peer bonds, seeking novel and exciting experiences, or taking risks and satisfying curiosity (Roberts, 2003).

There have been several key major reviews of studies looking at how school programming can reduce harmful substance use and its effects, but the evidence of success is often ambiguous and not readily available in many cases because of poor program design, unclear evaluation criteria, and other factors.

Reductions in the use of harmful substances can be brought about by a concerted application of a combination of regulatory, early intervention, and harm reduction approaches. Harm reduction does appear to have some success with young people, especially those involved in risky injection drug use (Toumbourou et al., 2007), and other studies have demonstrated that school-based harm minimization may be more acceptable and effective in senior high schools but may not be acceptable in junior high schools (Poulin & Nicholson, 2005). Additional studies have shown that school programs in diverse environments can curb tobacco and marijuana use initiation, current and regular cigarette use, and alcohol misuse, and that programs involving peer influence can also be successful (Ellickson, McCaffrey, Ghosh-Dastidar, & Longshore, 2003; Orlando, Ellickson, McCaffrey & Longshore, 2005). Some programs have also shown longer-term success (Skara & Sussman, 2003).

The timing of programs, the context and delivery, and teacher training are all important in helping programs to be successful (McBride, 2003). In addition, there needs to be recognition that students from lower socio-economic status backgrounds are more likely to engage in risky health behaviours (Langille, Curtis, Hughes, & Tomblin Murphy, 2003).

An international review of school drug policies found a tendency for schools with younger students to have fewer policies in place, but those that did had more comprehensive policies than schools with older students. In other words, older students, who might benefit from appropriate comprehensive policies given the general increase in risky behaviours with age, were less likely to have policies in place (Evans-Whipp et al., 2004).

In a soon-to-be-published study, Tupper (in press) undertook a critical discourse analysis of a high school drug education text. The analysis showed that there was a tendency to use an alarmist tone, and some "facts" appeared to be primarily scare tactics that were at odds with normal situations. Given that the information was not credible, it had a possibility of having the opposite effect than intended.

School environment and culture is clearly important in determining the likelihood that students will engage in risky health behaviours, such as substance use. For example, the prevalence of older students smoking at school has shown to be influential among younger female students. On the other hand, the behaviour of close school friends was more important for younger male students; in addition, a supportive environment increased student attachment to school, thus increasing the likelihood of adherence to school norms (Leatherdale, Manske, & Kroeker, 2006; Schaps & Solomon, 2003). The overall school environment sends signals about the worth of students as well as the interest of school in promoting students' health and well-being. School policies can reflect the school environment and can make schools attractive to students (Roberts, 2003). Those students with high levels of school engagement in Canada have been shown to be significantly less likely to use alcohol, tobacco, and marijuana (CIHI, 2005).

School Environment

As societies change, schools are becoming more important in the lives of children and youth. Schools are now fulfilling roles that were previously the responsibility of families and the community. The Ministries of Education and Health, school boards, and parents view schools as the best place to develop our children and youth into informed and capable future citizens. Learning outcomes for students include searching out answers to questions and maintaining respect and a good attitude toward a diverse array of people. Schools are now caring for children and youth in many more aspects than the basics of reading, writing, and arithmetic. There are after-school activities and programs, as well as training in career and personal planning at school on topics such as sexual

health, responsible risk-taking, and tolerance of cultural, gender, and sexual differences. Being safe and making good decisions about career, finances, and health help lead to success in life (Miller, 2007).

Positive school culture enhances young people's lives in many ways. When children and youth have a sense of security, trust, and social connectedness with teachers and peers, and feel that someone cares about them, they are happier with their lives and do better academically (Blum & Libbey, 2004). They are more willing to take advantage of opportunities and improve their academic performance, and they feel valued for their participation in school life. The social milieu is important as it includes friends that students can talk to about ideas, dreams, and concerns. Students can feel supported and accepted for who they are and recognize that differences are strengths not weaknesses. The mental health and well-being of the people within the learning environment is an important factor in a student's ability to experience success at school.

Students who are well-connected to school can overcome major obstacles, including living on the streets while going to school, and those highly engaged in school are less likely to be involved in substance use, less likely to be engaged with people who are involved in risky behaviours, more likely to have significantly higher levels of self-worth, and more likely to have excellent or very good health and low levels of anxiety (CIHI, 2005). Positive school climates and strong connectedness and/or attachment to school do change people's lives (Catalano, Haggerty, Oesterle, Fleming, & Hawkins, 2004; Klem & Connell, 2004; McNeely & Falci, 2004; Sprott, 2004; Wilson, 2004; Ginder, 2005; Schoen, 2005; Patton et al., 2006; Pickett et al., 2006; Vieno, Perkins, Smith, & Santinello, 2007; Xin, 2007; St. Leger, Kolbe, Lee, McCall, & Young, 2007; Bond et al., 2007; Carter, McGee, Taylor, & Williams, 2007). Much of the research evidence on the importance of school connections has been summarized in what is known as the "Wingspread Declaration on School Connections" (Blum & Libbey, 2004).

Feeling safe in school is an important component of strong school connectedness. Bullying can involve both physical and verbal attacks, as well as activities which marginalize, isolate, or humiliate students who are different from the mainstream (Kosciw, 2004). Such activities can affect students' academic performance and are viewed as being toxic to students' health. Investments in specific anti-bullying programs at school have shown mixed results, and success is more likely in primary schools than in secondary schools (Smith & Ananiadou, 2003). Nevertheless, there are some programs that have been shown to work and to lead to safer and more positive school environments (Pepler, Craig, O'Connell, Atlas & Charach, 2004; Smith, Cousins, & Stewart, 2005; Fonagy, Twemlow, Vernberg, Sacco & Little, 2005; Baldry & Farrington, 2007).

There are several key components that work to create a positive school culture, which in turn helps to determine school climate and support the health of students (and teachers). These include factors such as leadership; shared decision-making; open, clear, and honest communication; reducing teacher stress while encouraging opportunities for developing collegiality and professional development; and encouraging family and community involvement. The school is situated within a broader environment that includes the local community, the people who work there, and parents and students who attend the school. High expectations of achievement, equitable rules, and expectations for positive behaviour are necessary for a positive school culture, as is addressing issues of violent behaviour quickly and fairly. There is also a need to address issues related to diversity so that all students feel welcome at the school, and are able to develop trust, a sense of belonging, and emotional safety (Schoen, 2005; Miller, 2007).

Responses to the Ounce of Prevention Report (2003)

Since the release of the *Ounce of Prevention* report in October 2003, the province, and particularly the Ministry of Education and schools, have made tremendous positive strides in responding to the recommendations. Actions have been taken that go beyond the initial recommendations. This section of the report looks at responses and key initiatives that have been introduced between November 2003 and November 2007 provincially and by government agencies.

The first report made six key recommendations. A brief summary of the recommendations and the progress made to date is provided in the following section.

1. Re-commit to support Healthy Schools initiatives.

The Ministries of Education and Health have jointly created the position of Director, Healthy Schools, to support coordination and cooperation between the two ministries and with the federal government and other members of the Joint Consortium for School Health. This office has also received staff resources to assist in its work, which among other things is to develop a strategic approach and common vision of the health-promoting school that is supported and maintained by a comprehensive, school health approach. Funding for the CommunityLINK (Learning Includes Nutrition and Knowledge) program was increased in 2004. These funds support districts to address the needs of vulnerable students.

2. Develop and implement an evidence-based curriculum that runs from school entry to graduation as part of a comprehensive school health promotion process.

Since 2005, the Ministry of Education has revised and implemented its Health and Career Education curriculum for Kindergarten through Grade 10. At Grade 10, the Health and Career Education curriculum is called Planning 10.

In addition, the physical education curriculum for Kindergarten to Grade 7 was revised in 2006 and is currently being implemented in BC schools. The Ministry of Health, in partnership with the Ministry of Education, developed Healthy Eating and Physical Activity Learning Resources for BC Schools, Grades 8-10. Each Healthy Eating and Physical Activity Resource meets the minimum mandated expectations for the healthy eating and physical activity prescribed learning outcomes in the "health-related" curriculum. Also, they integrate other appropriate curriculum (physical education and home economics) to support integrated learning across topic areas, as well as incorporate ethnic and First Nations' diversity and culture.[1] The Ministry of Education also recently revised the graduation transition requirements for Grades 10 to 12.[2]

3. Develop an infrastructure (staff) at the provincial and regional level to support implementation of comprehensive school health promotion.

The Office of the Director, Healthy Schools, is now supported by two full-time equivalent positions, funded through the Ministry of Education.

In an effort to enhance comprehensive school health at the local level, the ministry is working with school administrators and teachers in the development of a Healthy Schools Network, where schools work to develop healthy schools using a comprehensive school health approach. In October 2007, BC had 70 member schools.

The Ministries of Education and Health have developed a Healthy Schools Assessment Tool (Creating Healthy Futures) that enhances the capacity of educators to understand comprehensive school health.

4. Support multi-level training in health education in the form of university degree options and substantial in-service training for practicing teachers.

There has been some limited progress in this area. For example, in February 2007, the Ministry of Education held a one-day training workshop for all school districts in addictions education, using a train-the-trainer approach. Experts from the Centre for Addictions Research of BC led the training sessions. Those trained (82) were then able to return to their school districts to train others.

5. Set up an ongoing student health monitoring process to evaluate progress over time.

The Ministries of Education and Health are exploring the development of a health survey that will enable the province to capture the information it requires, while simultaneously providing the school community with feedback reports so they can also benefit from the process and the information. A key goal is to create a survey tool that will streamline data collection so that the health information required by

[1] *All BC provincial curriculum documents can be found online at: http://www.bced.gov.bc.ca/irp*

[2] *The graduation transition requirements can be found online at: http://www.bced.gov.bc.ca/graduation/grad-transitions/welcome.htm*

both sectors is captured by one mechanism. Timeliness in reporting back to the school community is viewed as critical to creating success in this area.

6. **Establish a formal mechanism whereby all related ministries and other stakeholders in child and youth health contribute to comprehensive school health promotion.**

The Office of the Director, Healthy Schools, has been created to provide systems integration at the ministry level, and provide coordination and support to education partner groups at the local level to implement comprehensive school health initiatives.

Government has developed the ActNow BC program, with its own Minister of State, to focus on the need to reduce smoking, improve levels of physical activity, focus on nutritious foods, and reduce levels of overweight and obesity in the province. Schools are an important setting for these initiatives. For example, smoking has recently been banned in all schools and on all school property; Action Schools! BC, a program to get students active and eat nutritious foods, is available for all Kindergarten to middle school students; daily physical activity has been introduced for all students; the Guidelines for Food and Beverage Sales in BC Schools is being implemented, which will mean banning junk food sales in schools; and a School Fruit and Vegetable Snack Program has been introduced.

The province has developed and put into operation a Child and Youth Mental Health Plan, the first such plan in Canada, and introduced the FRIENDS for Life program to Grade 4 and 5 students to reduce the risks of anxiety and build resilience in children. The no2meth website[1] has been developed to provide grade-appropriate resources to teachers and parents related to methamphetamine, or crystal meth, as well as alcohol, tobacco, and marijuana. Curriculum has been revised in sexual health and physical activity to promote healthy living, and immunization for Human Papillomavirus (HPV) will be available in the near future. There is now a Healthy Schools Network within the province and it is mandatory for school districts to have a code of conduct to promote safe, caring, and orderly schools, consistent with provincial standards.

Determinants of Health: Levelling the Playing Field

Several key initiatives have taken place over the past four years related to the determinants of health, with a goal to improve the health and development outcomes of students.

Education

Key initiatives related to education include improvements in programs for students from poorer neighbourhoods, an emphasis on early childhood learning so that students are ready to learn upon entering Kindergarten, efforts to improve the educational outcomes of Aboriginal students, and improvements in literacy for all citizens.

CommunityLINK

CommunityLINK (Learning Includes Nutrition and Knowledge) is a series of programs that provides a variety of resources to schools. These programs include subsidized school lunch programs, support for community schools, healthy schools, special programs for inner city schools, and district-determined support to vulnerable students. In 2002/2003, CommunityLINK's programs went through a major review. After much discussion, including suggestions that these programs should be eliminated or reduced in funding, CommunityLINK's resources were not only reinstated but increased, and it was transferred to the Ministry of Education from the Ministry of Children and Family Development. This change enabled all school districts to benefit from CommunityLINK's programs. Robust evidence showed that students from schools in lower socio-economic areas that received program funding, when compared to those schools that did not receive funding, had better academic outcomes in terms of Foundation Skills Assessment scores, graduation rates, and grade-to-grade transitions (Wright, 2003).

The BC Progress Board has recommended that additional resources be added to the program, given its proven success in helping improve the academic performance of students from disadvantaged backgrounds (Banting, 2006).

The latest (2005) cross-Canada comparative data on child poverty in BC indicate that since 1999, the province has

[1] *http://www.no2meth.ca*

had the highest child poverty rate among all provinces and territories, although the percentage has fallen over the past couple of years (First Call, 2007; Campaign 2000, 2007). Using the Low Income Cut-off (LICO) to show child poverty levels, 15.2 per cent of BC children lived in families below the LICO, compared to a Canadian average of 11.7 per cent. CommunityLINK program initiatives are still very much required to help "level the playing field" for those students living in relative poverty; it is well-known that students from families with lower socio-economic status do not do as well academically, or in terms of health status, as students from families with higher socio-economic status.

Early Learning Initiatives

The Ministry of Education is leading the development of the British Columbia Early Learning Framework for children from birth to age five. The framework describes, in broad terms, a vision, principles, and areas of early learning for preschool-aged children. A draft of the framework was posted on the Ministry of Education's website from May 1, 2007 to June 1, 2007, to provide an opportunity for public feedback. The ministry is currently revising the framework based on the feedback, and a revised version of the framework should be available online in 2008. The initiatives will:

- Influence early learning of preschool-aged children, in partnership with families and others in communities.
- Increase the number of children who demonstrate school readiness in Kindergarten.
- Identify learning goals for young children. These include well-being and belonging; exploration and creativity; languages and literacy; and social responsibility and diversity.

In 2006, the Ministry of Education introduced StrongStart BC Early Learning Centres throughout the province. These are free, drop-in early learning programs for preschool-aged children who are accompanied by a parent or caregiver; they are open at least three hours a day, five days a week, and are run by qualified early childhood educators. Key activities include stories, music, and art. The centres assist parents/caregivers to support children's learning at home. Provision of healthy snacks is a component of this program.

All school districts have been given the opportunity to participate in providing these centres, which are located in vacant spaces in existing public schools. If possible, the centres are located in neighbourhoods where Early Development Instrument scores have indicated relatively low readiness-to-learn scores, or where there are high numbers of families whose first language is not English, who are Aboriginal, or who live in low socio-economic neighbourhoods. By early December 2007, nearly 80 centres were operational.

Other programs were introduced in recent years in collaboration with other ministries (Ministries of Health and Children and Family Development) including Ready, Set, Learn. This program provides children with an age-appropriate book, and parents/families with a booklet on helpful tips for supporting preschooler learning.[1] Literacy, Education, Activity and Play (LEAP) BC also gives preschoolers a strong foundation in literacy, physical activity, and healthy eating through play and fun activities. Free resources and training are available for families and practitioners.

Roots of Empathy/Seeds of Empathy

Roots of Empathy is an evidence-based classroom program, funded by the Ministry of Education and implemented by the Ministry of Children and Family Development, which has shown dramatic effects in reducing levels of aggression and violence among school children while raising social/emotional competence and increasing empathy. A neighbourhood parent and infant visit the classroom every three weeks over the school year, where a trained instructor coaches the students to observe the baby's development and to label the baby's feelings. This "emotional literacy" that is taught in the program lays the foundation for more safe and caring classrooms.

In the spring of 2007, government announced it would expand BC's empathy program for preschoolers, the Seeds of Empathy. The Seeds of Empathy program fosters the development of positive social and emotional behaviours in the critical early years of a child's life, teaching preschool children about vulnerability, diversity, and respecting and valuing others. The program is offered in English, French, and French Immersion classrooms. There will be 25 programs in 2007/2008 and another 25 in 2008/2009.

[1] *The booklet is available in 12 languages other than English.*

Aboriginal Educational Initiatives

In order to assist Aboriginal students to improve their educational performance, Boards of Education are developing and implementing Aboriginal Education Enhancement Agreements with Aboriginal communities. An Enhancement Agreement is a working agreement between a school district, all local aboriginal communities, and the Ministry of Education, which establishes shared decision-making and specific goal-setting to meet the educational needs of Aboriginal students. These agreements require a high level of respect and trust to succeed, and they foster cooperation, collaboration, and greater autonomy among Aboriginal communities and school districts in supporting continuous improvement of Aboriginal student achievement. As of February 2008, 36 school districts had signed agreements with their Aboriginal communities.

In late November 2007, the province introduced the *First Nations Education Act*, which recognizes First Nations' jurisdiction over First Nations education on First Nations lands in BC. A key benefit of the legislation is that First Nations students will be able to be educated in their own communities, which will assist in the retention of First Nations culture. The legislation allows the participating First Nations to have their own system of Kindergarten to Grade 12 education, based on provincial curriculum learning outcomes for core courses that lead to graduation. Further, those First Nations that have granted their own graduation certificates can apply to have students receive the provincial Dogwood high school graduation certificate. This will improve graduation rates for First Nations students, and improve their future prospects and health in their adult years.

Creation of Boards of Education to Develop District Literacy Plans

In the spring of 2007, the Ministry of Education introduced legislation to rename school boards "Boards of Education", thus setting the stage for traditional school districts to introduce educational activities beyond the traditional Kindergarten to Grade 12 model. The Ministry of Education now requires each Board to develop an annual District Literacy Plan (DLP). The DLP is a statement of commitment by a district to collaborate with key community stakeholders to improve literacy throughout their community. Built collaboratively on an evidence-based assessment of the needs and priorities of each community, DLPs will identify areas of focus for the improvement of literacy, describe strategic actions, including opportunities for improved access to literacy programs and services, and outline processes to monitor progress and make adjustments in order to improve literacy, and with it, the health status of the community. A transitional guideline has been provided for 2007/2008 to help school districts formulate their plans.

Activity/Nutrition/Weight

ActNow BC

In 2005, the provincial government introduced ActNow BC. It was partly in response to a 2004 report by the BC Select Standing Committee on Health, which stated that 50 per cent of the most common chronic diseases were a result of, among other things, poor diet and physical inactivity resulting in overweight status or obesity. The committee noted: "The need to act now is urgent" if the health care system is to be sustainable (Select Standing Committee on Health, 2004, p. 2). The government, therefore, set ambitious goals, including: increase the number of people eating five or more servings of fruit and vegetables each day by 20 per cent; increase the number of people who are physically active by 20 per cent; and reduce the number of adults who are overweight by 20 per cent. This set the stage for the introduction or strengthening of a variety of programs in schools to help achieve these goals, which was summarized by the Deputy Minister of Education in correspondence to school superintendents (Dosdall, 2007).

Action Schools! BC

Action Schools! BC is a physical activity and nutrition model to assist teachers and administrators to integrate physical activity and healthy eating into the school environment. This socio-ecological model (Naylor, Macdonald, Reed, & McKay, 2006) emerged from a pilot initiative funded through the Ministry of Health. The evaluation showed that those schools involved in the program showed improvement in healthy eating, physical activity levels, healthy weights, healthy hearts and bones, and self-esteem, when compared to sample schools that were not involved. Further, academic performance also improved when compared to the control schools (McKay, 2004).

Based on these results, the voluntary program was made available to all schools between Grades 4 to 7, and recently expanded to include all schools from Kindergarten to middle school. The program, which is funded by the Ministry of Health and supported by 2010 Legacies Now, involves six "Action Zones": school environment; scheduled physical education; classroom action; family and community; extracurricular; and school spirit. Those registered as Action Schools are encouraged to create an Action team and develop an action plan integrating all six Action Zones. At the end of December 2006, nearly 1,150 of all eligible schools had registered (72 per cent of all eligible schools [Foster & Keller, 2007]); by October 2007, this had increased to nearly 1,400 (85 per cent of eligible public schools, and 57 per cent of eligible non-public schools) (Figure 6.1). This socio-ecological model provides a good example of how to improve knowledge exchange and multi-level intersectoral action in health promotion (Naylor et al., 2006).

Physical Activity

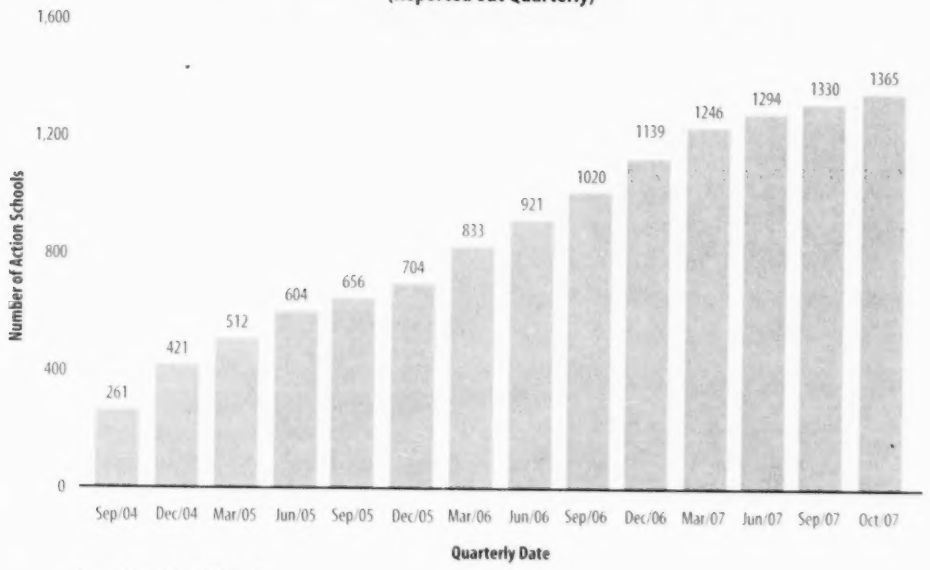
Since 2003, the Ministry of Education has been revamping part of the school curriculum, to more precisely prescribe learning outcomes for physical education so that improvements could be measured. Also, curriculum has been modified to make physical activity more enjoyable, in the hope of giving students a sense of commitment to lifelong activity. As well, students in Grades 11 and 12 were required to document a minimum of 80 hours of physical activity in each grade in order to graduate.

In addition, new learning resources have been developed and provided to teachers to improve students' skills and knowledge in making healthy choices for lifelong physical activity and healthy eating. These resources support health and career education curricula for Kindergarten to Grade 9, and also Planning 10 curriculum. Grades 8 to 10 were implemented in the fall of 2007, and the remainder will be field-tested in 2008 and introduced into schools in the fall of 2008.

More recently, at the start of the 2007/2008 school year, the Ministry of Education announced that by September 2008, daily physical activity will be implemented for each school. Each student from Kindergarten to Grade 9 will be expected to do at least 30 minutes of daily physical activity (with at least 10-minute blocks of sustained activity), while those in Grades 10 to 12 will be expected to do at least 150 minutes

Figure 6.1

Number of Registered Action Schools in BC, September 2004 to October 2007
(Reported out Quarterly)



Source: Action Schools! BC, 2007

each week. A number of "early leaders' schools" will be testing the process prior to September 2008. This step was taken in recognition that physically active students learn better and achieve more. But it was also recognized that students achieving healthy habits at a young age increase their chances of longer, healthy lives. Tracking and monitoring of this initiative is an issue to be resolved before full implementation.

In April 2007, the Ministry of Education made four booklets available to students and families that focused on how children and youth could become physically active and eat nutritious foods. Known as *Healthy Living for Family Booklets*, they are geared to families and students in Kindergarten to Grade 3, Grades 4 to 7, Grades 8 and 9, and Grades 10 to 12. These booklets recognize that families have an important responsibility in the process of healthy learning and living.

Nutrition

A 2005 survey was undertaken by the Ministries of Education and Health of food and beverage sales and policies in BC schools and school districts. There were several important findings. Of the 48 school districts that responded to the survey, 29 (60 per cent) had no nutrition policies in place; 20 of these districts were planning to develop policies; and the remaining 9 districts had no plans to do so. Of the 19 districts with policies in place, 12 had plans to upgrade them.

Responses from 1,169 individual schools (71 per cent of BC's public schools) showed that schools that had formal groups concerned about nutrition had a lower potential for food sales from vending machines and a higher proportion of healthy snack options in their vending machines (Ostry, Rideout, Levy-Milne, & Martin, 2005; Rideout & Ostry, 2007). They were also more likely to have established nutrition policies and guidelines. As of November 2007, an update to this survey was being analyzed by the Ministry of Education and the Ministry of Health.

These results helped shape the development of the 2005 Guidelines for Food and Beverage Sales in BC Schools (MEd & Ministry of Health [MOH]). Foods and beverages typically sold in schools have been categorized into four categories: not recommended; choose least; choose sometimes; and choose most. As part of its healthy eating strategy, the BC Healthy Living Alliance provided $1 million, through the Dietitians of Canada, to support schools in implementing the guidelines. This support includes making a centralized resource available, providing schools and school districts with customized supports, and raising school community awareness about the guidelines.

In September 2007, based in part on the new edition of Canada's Food Guide, the guidelines were modified so that those foods and beverages falling into the "not recommended/choose least categories" would be eliminated in elementary schools by January 2008, and by September 2008 in middle and secondary schools.

The School Fruit and Vegetable Snack Program was introduced as a pilot program in 10 schools in 2005/2006, through funding from the Ministry of Health. The pilot program provided BC-grown produce to students, along with information for teachers and families. The program is now supported by several ministries, including Health; Tourism, Sport and the Arts; Agriculture and Lands; and Education, as an ongoing ActNow BC initiative. By January 2008, 364 schools were involved in the program. By 2010, all public schools will have had the opportunity to participate. Snacks, which are provided bi-weekly for about 18 weeks of the school year, include baby carrots, greenhouse-grown mini-cucumbers and tomatoes, kiwifruit, apples, pears, and plums. The program is delivered by the BC Agriculture in the Classroom Foundation in partnership with Overwaitea Group.

Mental Health

In 2003, the BC government, through the Ministry of Children and Family Development, introduced a five-year plan to improve mental health services for children and youth. Four major approaches were advocated in the plan:

- Timely and effective treatment and support services for children with serious mental illness.
- Programs to reduce risk by preventing and reducing the effects of mental illness.

- Building community and family capacity to prevent and/or overcome the negative impacts of mental illness in children and youth.
- Better systems to coordinate services, monitor outcomes, and ensure public accountability for policies and programs.

The plan was endorsed by the provincial government and funding has been added in each of the five years since the plan was produced (2003/2004 to 2007/2008). The plan has resulted in new resources being provided to communities, some of them through school districts.

FRIENDS for Life

One of the key initiatives in schools has been the introduction of the FRIENDS for Life program by the Ministry of Children and Family Development in cooperation with the Ministry of Education. This evidence-based initiative enables school professionals to deliver FRIENDS as a classroom-based, universal prevention program, or as an early intervention to children who might be at higher risk for anxiety disorders.

The FRIENDS for Life program was originally developed in Australia. This is a school-based early intervention and prevention program confirmed by the World Health Organization (2004) to reduce the risks of anxiety disorders and to build resilience in children. FRIENDS for Life helps children learn how to cope with fears and worries and provides them with tools to manage difficult experiences now and in later life. The program was launched in BC schools in September 2004 and since that time, over 90 per cent of school districts have participated. By the end of 2006/2007, more than 50,000 Grade 4 and 5 students had taken part in the program.

There are 17 trainers in the province, some contracted through the Ministry of Children and Family Development, some from community agencies, and some from the school district. Over 1,050 teachers were trained in 2006/2007 to provide the course, and support materials are provided free-of-charge to participating schools. In addition, each school district has a designated FRIENDS liaison, who works closely with provincial staff, supports teachers, and coordinates local training. The program is currently being evaluated by Simon Fraser University and McMaster University.

Other pilots are currently underway, including the FRIENDS for Youth Program and a culturally appropriate version for Aboriginal students. By the end of 2007/2008, parents in 45 school districts will have received parent training.

Substance Use

Part of the ActNow BC initiative involves setting targets to reduce smoking and promote alcohol-free pregnancies. No goals, however, were established for other substance use, perhaps because such use is illegal, except for the approved medicinal use of marijuana.

Tobacco

In the spring of 2007, the Ministry of Health introduced amendments to the *Tobacco Control Act* to ban tobacco use in schools and on school property. While most school districts already had some form of restriction (McBride, 2005), the new approach bans tobacco use entirely (with an exemption for the traditional Aboriginal cultural use of tobacco), so that schools have a 100 per cent tobacco-free environment for students, staff, and visitors. The ban is part of the Ministry of Health's Tobacco Control Program, which aims to prevent youth and young adults from starting to use tobacco and to encourage those who do use tobacco to quit or reduce consumption. The tobacco ban came into force in all schools on September 2, 2007, and includes all tobacco products, not just cigarettes. Based on earlier work (McBride, 2005) and research elsewhere (Reitsma & Manske, 2004), sensitive enforcement may be required if the restrictions are to be successful. The Ministry of Health has worked with the Ministry of Education to develop tools for school districts to use in implementing smoke-free school policies. In addition, the Ministry of Health has supported school districts by providing signage for all public and independent schools.

The Ministries of Health and Education have developed resources for teachers to provide best classroom practices and the latest research on tobacco prevention and cessation. Known as *bc.tobaccofacts*, these resources target Grades 4 to 12 and are based on five key themes: effects of tobacco use; social norms; reasons for tobacco use; social influences; and resistance skills.

Kick the Nic is a group program, supported by ActNow BC, to assist young people to quit smoking. It is delivered by health and education professionals in school settings. It is based on assumptions that students who attend the 10-session program have made the decision to quit tobacco, that peer support is useful, that social situations appeal to students, and that quitting tobacco is a process. Preliminary evaluations suggest that this program is most successful for those aged 16 and older.

BC will also introduce a province-wide ban on smoking in public places, to come into effect on March 31, 2008. It will also set a three-metre smoke-free buffer zone around most doorways, open windows, and air intakes to public and work places. Under this ban, there will be no exceptions and no allowances for designated smoking rooms, except for those rooms allowed for residents in certain long-term care facilities. This approach will help to model good healthy behaviour to young people as well as reduce their exposure to second-hand smoke. Again, enforcement, particularly in smaller rural communities where smoking is much more prevalent, may be a problem (Foster & Keller, 2007).

Alcohol and Drugs

Alcohol

Celebrating high school graduation with alcohol is a perennial problem not only in BC high schools but elsewhere in the country, and every year tragedies occur that are related to drunk driving. The BC Liquor Stores' Dry Grad campaign collects donations from customers and staff, usually throughout the month of March, to support dry grad celebrations. In 2007, 54 school districts participated in the campaign, and nearly $500,000 was collected to supplement other funds raised by students, parents, and teachers.

Crystal Methamphetamine (Crystal Meth)

In 2004, BC introduced an integrated Crystal Meth Strategy, which combined the efforts of government ministries, regional health authorities, and addictions treatment service providers. In 2005, the Crystal Meth Secretariat within the Ministry of Public Safety and Solicitor General was established, and committed resources to help communities fight methamphetamine use, through public awareness and school-based initiatives, and through treatment targeted at methamphetamine addiction.

The Ministry of Education, with support from the Ministry of Health, developed a prevention and awareness component of the provincial Crystal Meth Strategy. Educational resource materials have been developed by the Ministry of Education for schools, including teacher and grade-appropriate resources for Grades 6 to 12. Information materials for parents/guardians are also available on the no2meth website.[5] This website includes resources for teachers related to alcohol, tobacco, marijuana, and methamphetamine. Other initiatives included a media campaign that featured television and print advertising to encourage parents to talk to their children about crystal meth and to start a dialogue about drug use.

Some schools still use the DARE program provided by local police forces, although evidence indicates that it is not effective in preventing alcohol, tobacco, and other drug use among students. DARE does, however, appear to improve students' perceptions of the police and police understanding of students (Minnesota Prevention Resource Center, n.d.).

Sexual Health

In 2006, changes to the Health and Career curriculum, which includes issues related to sexual health, were implemented in BC schools to provide more detail on content, expectations, and prescribed learning outcomes. Improvements were made in the areas of critical thinking, empowerment, and the development of autonomy. However, the federal government's Canadian Guidelines for Sexual Health Education have not yet been adopted in the curriculum.

A new Planning 10 course has been put in place in BC schools to help students develop the skills they need to become self-directed individuals who set and pursue goals and make thoughtful and responsible decisions throughout their life. Skills covered in the course include accessing information; analyzing for accuracy, relevancy, and bias; and understanding they are responsible for attaining and maintaining their overall health and financial well-being, and for developing education and career goals. The health component learning outcomes

[5] *http://www.no2meth.ca*

are taught in different subject areas as well as part of the Planning 10 course: for example, healthy living (Physical Education); health information and media literacy (English); healthy relationships (Humanities); healthy decisions and their effects (Humanities, Family Life, Psychology); sexual decision-making, sexually transmitted infections, HIV/AIDs (Physical Education); substance misuse and road safety (special presentations).

Research has shown that there is an almost 100 per cent correlation between cervical cancers and human papillomavirus (HPV) types 16 and 18 infection. HPV infection, which is a sexually transmitted disease, is also directly involved in other cancers, particularly cancers of the anus, vulva, vagina, tonsil, and conjunctiva, among others. It is also implicated in non-malignant diseases such as genital warts, recurrent respiratory papillomatosis, and sinuonasal and conjunctival papillomas (British Columbia Cancer Agency, 2006). The Canadian Paediatric Society (2007) has recently recommended that HPV vaccine be administered routinely to all girls between 9 and 13 years of age; the BC Minister of Health announced in September 2007 that an immunization program will be implemented; however, details on the program are still pending.

School Environments

The Ministry of Education has taken many positive steps since the 2003 *Ounce of Prevention* report to improve school environments, as a step towards improving health learning and health status of students. Substantial progress has been made to strengthen the Healthy Schools program. Other actions include new guidelines on conduct, a revised framework on diversity, as well as courses to recognize sexual diversity.

Healthy Schools Initiatives

The creation of the position of Director, Healthy Schools, in 2005 was an important first step in rejuvenating and strengthening the Healthy Schools initiative. This followed the 2004 transfer of the CommunityLINK program, which had Healthy Schools funding, to the Ministry of Education from the Ministry of Children and Family Development. The Director reports to executive positions in both the Ministries of Health and Education, which helps to reinforce support from both ministries.

Since the creation of the position in 2005, additional resources have been provided to the office to support collaborative initiatives among ministries, school districts, schools, and health-promoting agencies; this multi-sectoral work is a key principle of health promotion. In October 2006, the Healthy School Network (HSN) was launched, with the support of the Director, Healthy Schools. Network members include public and independent schools that share the goal of "improving overall student health through the school setting" (Healthy Schools Network, 2006). The HSN is a voluntary organization of schools and is a part of the larger Network of Performance Based Schools. The HSN has a common goal "to address the wide variety of academic, social and emotional concerns of students through the lens of comprehensive school health" (MEd & MOH, 2007, p. 1). The HSN is jointly supported by the Ministry of Education and Ministry of Health, and includes a regular newsletter that shares success stories and other health-promoting information.

One of the first tasks of the Healthy Schools Network has been to pilot a Healthy Schools Network Assessment Tool that helps schools to identify their areas of strengths and areas for improvement. The Assessment Tool gives schools a fuller understanding of comprehensive school health. After completing the assessment, schools can address areas of concern (e.g., healthy eating, physical activity, and improved school connectedness or attachment) through a Healthy School Improvement Plan.[1]

The number of schools in the Healthy Schools Network has more than doubled—from 33 in January 2007 to 70 in October 2007—and the number of school districts participating has grown from 18 to 28. Several school districts have designated Healthy Schools Coordinators to help promote and support school health district initiatives.

Healthy Living Performance Standards

The Ministry of Education, in partnership with the Ministry of Health, is working with Healthy Schools Network member schools to develop new Healthy Living Performance

[1] *More information on the Assessment Tool can be found at http://www.bced.gov.bc.ca/health/hsnetwork/hsn_assessment_tool.pdf*

Standards. The standards will focus on performance assessment, as students will be asked to apply the skills and concepts that they have learned to complete complex, realistic tasks.

The standards will align with areas of BC curriculum addressing healthy living outcomes, including:

- Health and Career Education K-9.
- Planning 10.
- Graduation Transitions 10-12.
- Physical Education K-12.
- Daily physical activity.
- Home Economics 8-10.
- Food Studies 11-12.
- Family Studies 11-12.

The new performance standards will improve health literacy for BC students. Health literacy is a concept that links literacy level with an ability to act upon health information and take responsibility for one's own health. Critical health literacy describes the more advanced set of cognitive skills that, together with social skills, allow students to critically analyze and use information to:

- Access health services.
- Understand health-related issues.
- Make informed decisions.
- Advocate for their health as well as their family's health.
- Gain greater control over their health and well-being.

The standards will be piloted in the 2008/2009 school year, and will be ready for use provincially in September 2009.

Joint Consortium for School Health

The Joint Consortium for School Health (JCSH) is a pan-Canadian organization established in August 2005 by provincial and territorial ministers and federal departments of education and health to promote school health activities. British Columbia is the lead province for the JCSH and hosts the Consortium Secretariat. The JCSH brings together health and education sectors at the most senior levels of government, creating integration and joint ownership for school health at national, provincial, territorial, and local levels. The JCSH is well-positioned as a portal for school health promotion for governments across the country. This model has gained both national and international attention, and the House of Commons Standing Committee on Health recommended that the federal government work in collaboration with the JCSH on appropriate food and physical activity standards and programs for schools. The JCSH is currently working with a federal/provincial/territorial working group on the revisions to the federal Canadian Guidelines for Sexual Health Education (Joint Consortium for School Health, 2007).

Safe, Caring, and Orderly Schools

In March 2004, the Ministry of Education introduced *Safe, Caring and Orderly Schools: A Guide* following the 2003 report of the Safe Schools Task Force. The guide provides a vision for safe schools as well as provincial standards for codes of conduct, while identifying the key characteristics of safe, caring, and orderly school environments (MEd, 2004a). The guide recognizes the importance of a strong relationship between a student's ability to learn and his/her feelings of safety at school, and feelings of belonging at school.

The guide notes that a positive and welcoming school culture is also one that promotes learning. Such cultures prevent problems and use the whole-school approach to build communities and foster inclusion, respect, fairness, and equity. Clear, consistent expectations contained in codes of conduct are communicated and reinforced. Schools with such cultures teach and model socially responsible behaviour, and promote a strong school culture that solves problems in peaceful ways, values diversity, and defends human rights (MEd, 2004a, p. 9). Overall, the Ministry of Education indicated that safe, orderly, and caring schools are ones that:

- Anticipate and respond promptly to unsafe conditions or actions.
- Respond promptly to bullying, harassment, and intimidation.

- Enable parents to advocate for their children's well-being.
- Enable students to help each other.
- Promote appropriate adult-student connections.
- Are proactive about actions, interactions, and distractions.

Amendments to the *School Act* introduced in the spring of 2007 have made the establishment of codes of conduct compulsory, and subject to provincial standards set out in a Ministerial Order (October 23, 2007) that instructs School Boards to include the following in their code of conduct:

- One or more statements that address the prohibited grounds of discrimination set out in the BC Human Rights Code.
- A statement of purpose.
- One or more statements about what is acceptable behaviour and unacceptable behaviour.
- One or more statements about the consequences of unacceptable behaviour. Consequences should be focused on restorative, rather than punitive, actions.
- An explanation that the Board will take all reasonable steps to prevent retaliation by a person against a student who has made a complaint of a breach of the code of conduct.

If successful, these activities should help reduce harassment and bullying in schools.

Diversity in BC Schools

In March 2004, the Ministry of Education produced a revised document entitled *Diversity in BC Schools: A Framework*. The framework recognizes the increasing population diversity in the province and reiterates that schools have an important social agenda as well as an educational agenda (MEd, 2004b). Schools should create and maintain:

- Equitable access to and equitable participation in quality education for all students.
- School cultures that value diversity and respond to the diverse social and cultural needs of the communities they serve.
- School cultures that promote understanding of others and respect for all.
- Learning and working environments that are safe and welcoming, and free from discrimination, harassment, and violence.
- Decision-making processes that give a voice to all members of the school community.
- Policies and practices that promote fair and equitable treatment.

The framework reflects a philosophy of equitable participation and an appreciation of the contributions of all individuals.

Social Justice Curriculum

In September 2007, the Ministry of Education piloted a new course in Grade 12 on Social Justice. This elective course explores the nature of a just and equitable society by focusing on social justice issues, such as race, ethnicity, gender, family structure, and sexual orientation. Full implementation is planned for September 2008. This course resulted from an agreement between the province and two gay parents who were seeking, through the BC Human Rights Tribunal, the addition of sexual orientation as a topic in the educational curriculum.

The *Safe, Caring, and Orderly Schools Guide*, the Diversity Framework, and the social justice curriculum all work to ensure that those who are different, who may be at the margins, and/or who are disadvantaged and vulnerable because of sexual orientation, abuse, or differing appearance, can be comfortable in a school setting and can thrive and succeed.

Distributed Learning

Over the last few years, educational choice in BC has been expanded through the use of distributed learning, especially for students in Grades 10 to 12. While distributed learning has been in existence in the province for many years, Bill 33 and the 2006 revisions to the *School Act* eliminated unnecessary rules, set common definitions, and put quality standards in place. In addition, improvements to the way students would

be funded were also introduced. Distributed learning has the following vision:

- To create a quality, dynamic, and engaging learning environment that all students in BC can access. It will not be limited by schedules, calendars, facilities, or location.
- To ensure student performance in distributed learning will continuously improve.
- To provide equitable access to education, specifically providing choice for those students who have restricted options, especially students in rural communities, students with special needs, and Aboriginal students.

Making more choices available to students who might not have access to courses in their own communities has the potential to keep students engaged in learning who might otherwise drop out, thus increasing their chances for improved development and health over the long-term. Distributed learning may also hold promise for the distribution of health promotion resources electronically to students enrolled in distributed learning (e.g., healthy living is included in the distributed learning Planning 10 course).

Chapter 7

Recommendations

Recommendation 1: Evaluate New Initiatives and Develop a Consolidated Report Card

Ongoing evaluation is required to ensure that the initiatives introduced over the last four years work as expected, or to make improvements as necessary. Training of teachers and instructors will be an important component of implementation. While some evaluations are planned or underway, results are often presented in separate reports or websites. The provincial government should develop a single, provincial-level report card, perhaps based on a streamlined survey tool card, that contains the results from the various initiatives. This will help government and school districts to keep a focus on the importance of the school and its activities as a setting for health promotion, and will help sustain these new initiatives.

Recommendation 2: Make Better Use of Existing Data

While there are several good datasets that can be used to monitor the health and well-being of students, they can be put to additional use to help inform policy and practice. For example, the Ministry of Education's School Satisfaction Survey contains several years of data related to school environment and health issues. These data can identify the top-performing schools and/or school districts. By looking at and highlighting the reasons behind high performance, there is a potential for others to learn and adopt successful practices. Further, given the importance of school climate and school connectedness for educational performance and health status, a school connectedness index could be created using the School Satisfaction Survey questions to determine what works and what can be learned from high-performing schools and/or school districts.

Recommendation 3: Develop and Implement a Keeping Healthy Course for Grade 12 Students

Consideration should be given to introducing a Grade 12 course on Keeping Healthy and Responsible Decision-Making. Grade 12 is an important transition year for students and the majority of Grade 12 students do not feel that they are learning very much at school on how to be healthy. The course should emphasize responsibility related to specific risk-taking behaviours, such as substance use and sex (e.g., the need to use a condom), and include the use of the Canadian Guidelines for Sexual Health Education. Well trained, supportive teachers are needed to deliver such a course, and students will require access both to resources that are youth-friendly and health education professionals that are non-judgmental.

Recommendation 4: Improve Reporting of Milestones and Understanding of Differences Between Sexes and School Districts

Given the importance of education to current and future health status; there is a need for better recording of educational milestones. For example the percentage of eligible students participating in Foundation Skills Assessments has fallen in recent years, which has created under-reporting. There is also a need to track what happens to older students who drop out of school, to look at why they drop out and what measures can be taken to keep them

connected to school. Finally, there is a need to understand why there are differences between genders, and differences between urban and rural districts in terms of educational achievement and health status, and what can be done to minimize these differences while raising achievement overall.

Recommendation 5: Increase Support to At-Risk Students

While the majority of students are successful academically and are healthy, there is a group of students who are at risk of not meeting their potential academic or health outcomes. This group includes: children in government care; students who have suffered abuse or reported a challenging home life; lesbian, gay, or bisexual students; and marginalized or street youth. Under the United Nations Convention on the Rights of the Child, every child has the right to thrive, and special initiatives are necessary to ensure that these at-risk children and youth feel that they belong in school, and are accepted and welcomed by other students and teachers, so that they too can thrive and achieve academic success and related good health. Enhancements to programs such as CommunityLINK, which provides resources for community schools and school meals, can help support some of these disadvantaged students. Programs could be expanded to include nutritious school breakfasts, given the importance of this meal for learning and the fact that half of Grade 7 to 12 students do not have breakfast every school day.

Specific programs should be developed and evaluated to assist children in care, because they have poor education and health outcomes, and they are the responsibility of the province.

Suggestions made in the recent joint report of the Representative for Children and Youth and the Provincial Health Officer (2007) on educational experiences and outcomes of children in care should be implemented as recommended.

Recommendation 6: Support Increased Early Learning Monitoring and Opportunities

The latest data suggest that nearly 30 per cent of children entering Kindergarten are not fully "ready-to-learn", based on results from the Early Development Instrument (EDI). Only one-third of all Kindergarten students are assessed each year using the EDI. The EDI should be implemented for every child at initial school entry, whether in Kindergarten or Grade 1.

The development of StrongStart Early Learning Centres are a way to help improve "readiness-to-learn." The latest provincial budget has stated that 400 of these centres will be operational by 2010. These centres could also be used as a setting to provide health promotion material to the families of pre-Kindergarten children who attend, similar to the *Healthy Living and Family Booklets* developed for school-aged children and their families.

Recommendation 7: Expand Smoke-Free Environments for Young People

Measures are underway to expand smoke-free environments. The school-aged population is more vulnerable to second-hand smoke in vehicles than older people, due to their lack of choice to be in that environment. Parents of students should be informed of the dangers of smoking in a vehicle while their child is present, and smoking in vehicles should be banned when young children are present. A recent national poll released by the Canadian Cancer Society indicated that 82 per cent of those surveyed supported a ban on smoking in vehicles when children under the age of 18 years are present. The poll also indicated that 69 per cent of smokers supported such a ban (Canadian Cancer Society, 2008). In February 2008, the BC government announced in the Speech from the Throne that "to ensure children are no longer subjected to second-hand smoke in any vehicle, new legislation will ban smoking in vehicles when children are present (Province of British Columbia, 2008). Further smoking restrictions should be implemented in foster homes of children in care, consistent with the recommendation made in the 2006 joint report by the Child and Youth Officer for British Columbia and the Provincial Health Officer.

Recommendation 8: Expand Mental Health Initiatives

While steps are being taken to deal with overweight, obesity, poor nutrition, and physical inactivity in schools, emotional and mental health issues continue to be a challenge for youth. Consideration should be given to expanding evidence-based programs such as FRIENDS for Life.

Recommendation 9: Continue to Promote and Support Health in Schools

Build on the successes evident to date and ensure the continued promotion and support of health in schools. This would include supporting the continued growth of the Healthy Schools Network, continuing support for the new physical activity initiative (K-12), and continuing to support the partnership between health and education.

Recommendation 10: Provide Healthy Programs to All Aboriginal and Independent Schools

Ensure Aboriginal band schools and independent schools have access to all public school health initiatives and programs.

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